

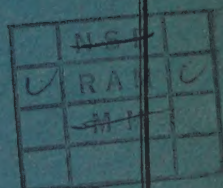


COLONY OF MAURITIUS

**Annual Report**  
OF THE  
**Department of Agriculture**  
**1955**

[PRICE: R. 1.25]

PRINTED AND PUBLISHED BY  
J. ELLIOT FELIX, I.S.O., GOVERNMENT PRINTER,  
PORT LOUIS, MAURITIUS  
OCTOBER 1957



No. 37 of 1957









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## DEPARTMENT OF AGRICULTURE, MAURITIUS

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### Scientific and Technical Staff

(As at 31st December, 1955)

#### ADMINISTRATIVE DIVISION

|                         |     |                                                                                                                                |
|-------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------|
| Director of Agriculture | ... | M. N. LUCIE-SMITH, M.A., B.Sc.<br>Agric. (London), Dip. Agric.<br>(Wye), D.I.C.T.A. (Trinidad)                                 |
| Deputy Directors        | ... | G. A. NORTH COOMBES, O.B.E.,<br>B. Sc. Agric. (Read), Dip. Agr.<br>(Maur.)<br>R. AVICE, A.R.T.C. (Glas.), Dip.<br>Agr. (Maur.) |

#### AGRICULTURAL DIVISION

|                                 |     |                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Senior Agricultural Officers    | ... | L. JOHNSON, B.Sc. Hons. (Leeds)<br>R. C. ANSLOW, M.Sc. (Read), B.Sc.<br>Hons. (Dunelm)<br>A. D'EMMEREZ DE CHARMOY, M.B.E.<br>Dip. Agr. (Maur.)                                                                                                                                                                                                             |
| Agronomist                      | ... | L. SUZOR, Dip. Agr. (Maur.)                                                                                                                                                                                                                                                                                                                                |
| Horticulturist                  | ... | J. H. JULIEN, Dip. Agr. (Maur.)                                                                                                                                                                                                                                                                                                                            |
| Agricultural Officers           | ... | G. MAZERY, Dip. Agr. (Maur.)—<br>seconded to M.S.I.R.I.<br>P. REGNARD<br>L. MOORLEE, Dip. Agr. (Maur.)<br>J. DUHAMEL, Dip. Agr. (Maur.)<br>B. D. ROY, B.Sc. Agric. (Bangor),<br>Dip. Agr. (Maur.)<br>J. MAROT<br>I. FAKIM, Dip. Agr. (Maur.)<br>L. G. BAURISTHÈNE, Dip. Agr.<br>(Maur.)—seconded from Education<br>Department<br>1 Vacant (Temporary Post) |
| Assistant Agricultural Officers | ... | M. SOOLTANGOS, Dip. Agr. (Maur.)<br>acting Agricultural Officer<br>G. AVICE<br>D. REETOO<br>B. NUNDLOLL<br>S. BAGWANT<br>M. MORAD, Dip. Agr. (Maur.)<br>D. LALJI<br>I. DILMAHOMUD<br>D. DEWKURRUN<br>4 Vacant                                                                                                                                              |

In addition there are:—

- 1 Surveyor
- 1 Assistant Surveyor
- 7 Overseers Grade I
- 6 Overseers Grade II

#### AGRICULTURAL CHEMISTRY DIVISION

|                      |     |     |                                                                            |
|----------------------|-----|-----|----------------------------------------------------------------------------|
| Chemist              | ... | ... | R. LINCOLN, M.A. (Cantab.) Dip. Agr. (Maur.)—to retire 31st December, 1955 |
| Assistant Chemist    | ... | ... | F. BERCHON, Dip. Agr. (Maur.)                                              |
| Scientific Assistant | ... | ... | E. PABLOT                                                                  |

#### PLANT PATHOLOGY DIVISION

|                             |     |     |                             |
|-----------------------------|-----|-----|-----------------------------|
| Plant Pathologist           | ... | ... | G. ORIAN, M.B.E.—Temporary  |
| Assistant Plant Pathologist | ... | ... | L. ORIEUX, B.Sc. (Lond.)    |
| Plant Inspector             | ... | ... | S. FÉLIX, Dip. Agr. (Maur.) |
| Scientific Assistant        | ... | ... | A. JAGANATHEN—acting        |

#### CENTRAL BOARD DIVISION

|                                                    |     |     |                                                               |
|----------------------------------------------------|-----|-----|---------------------------------------------------------------|
| Registrar                                          | ... | ... | Vacant                                                        |
| Assistant Registrar and Chief Chemist              | ... | ... | P.J. GALEA, Dip. Agr. (Maur.)                                 |
| Accountant                                         | ... | ... | J. R. SADLER, A.S.A.A.                                        |
| Assistant Accountant                               | ... | ... | G. GNANY                                                      |
| Assistant Chemist                                  | ... | ... | Vacant                                                        |
| Investigational Officer and Weigh-bridge Inspector | ... | ... | D. ROCK                                                       |
| Senior Test Chemists                               | ... | ... | S. BELCOURT, B.Sc. (Bangor), Dip. Agr. (Maur.)—on study leave |
|                                                    |     |     | P. MÉNAGÉ, Dip. Agr. (Maur.)                                  |
|                                                    |     |     | I. AUMEERALLY, Dip. Agr. (Maur.)                              |

In addition there are:—

- 21 Test Chemists (crop only)
- 21 Samplers (crop only)

#### AGRICULTURAL COLLEGE DIVISION

|                     |     |     |                                                                        |
|---------------------|-----|-----|------------------------------------------------------------------------|
| Principal           | ... | ... | J. R. LAGESSE, B.Sc. (Lond.)                                           |
| Lecturers           | ... | ... | J. DUPONT, B.S. (Louis.) Dip. Agr. (Maur.) — seconded to Central Board |
|                     |     |     | A. ROUILLARD, M.S., B.S. (Louis.) Dip. Agr. (Maur.)—temporary          |
|                     |     |     | R. LATULIPE, B.Sc. (Lond.)                                             |
|                     |     |     | Vacant                                                                 |
| Assistant Lecturers | ... | ... | R. BURRENCHOBAY, B.Sc. (Edin.)                                         |
|                     |     |     | P. GUÉRANDEL, Dip. Agr. (Maur.)                                        |
|                     |     |     | Vacant                                                                 |

## ENGINEERING DIVISION

|                                          |                                                                        |
|------------------------------------------|------------------------------------------------------------------------|
| Sugar Technologist and Officer-in-Charge | S. STAUB, A.R.T.C. (Glas.), A.M.I. Mech. E., F.C.S., Dip. Agr. (Maur.) |
| Chemical Engineer                        | ... E. LIMFAT, B.Sc. (Lond.) A.C.G.I., A.M.I. Chem. E.                 |
| Assistant Chemical Engineer              | ... Vacant                                                             |
| Assistant Sugar Technologist             | ... R. THÉLÉMAQUE, Dip. Agr. (Maur.)                                   |
| Scientific Assistants                    | ... S. MARIETTE, Dip. Agr. (Maur.)<br>J. A. AH-YU                      |
| Supervisor, Yeast Factory and Maize Mill | M. DUVIVIER                                                            |

## ENTOMOLOGICAL DIVISION

|                        |                                                            |
|------------------------|------------------------------------------------------------|
| Entomologist           | ... J. R. WILLIAMS, B.Sc. Hons. (Bristol) D.I.C., F.R.E.S. |
| Associate Entomologist | ... L. A. MOUTIA, Dip. Agr. (Maur.) F.R.E.S.               |
| Assistant Entomologist | ... R. MAMET, Dip. Agr. (Maur.)                            |
| Scientific Assistants  | ... C. MONGELARD<br>Vacant<br>Vacant                       |

## LIVESTOCK DIVISION

|                                    |                                                                                                                                                              |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Senior Veterinary Officer          | ... A. DARNÉ, F.R.C.V.S., Dip. Agr. (Maur.)                                                                                                                  |
| Veterinary Officer                 | ... R. M. BOUVET, M.R.C.V.S., Dip. Agr. (Maur.)                                                                                                              |
| Animal Husbandry Officer           | ... J. BENNIE, Dip. Agric. (Groot.)—on leave prior to termination of secondment                                                                              |
| Assistant Animal Husbandry Officer | T. RIVALLAND                                                                                                                                                 |
| Scientific Assistant               | ... MRS. G. V. HARMER, N.D.D.                                                                                                                                |
| Senior Stock Inspector             | ... W. HADDON                                                                                                                                                |
| Stock Inspectors                   | ... F. NADEAU, Dip. Agr. (Maur.)<br>Vacant<br>Vacant                                                                                                         |
| Livestock Officers                 | ... L. PASCAL<br>C. DELAITRE—on study leave<br>C. ADELSON<br>J. H. AVICE<br>A. FERRIÈRE<br>D. D'ESPAIGNET, Dip. Agr. (Maur.)<br>C. GASSIN<br>CLIFFORD GASSIN |



In addition there are:—

- 1 Temporary Stock Inspector
- 1 Supervisor
- 1 Overseer
- 15 Livestock Assistants

#### RODRIGUES DIVISION

|                                 |     |                                                           |
|---------------------------------|-----|-----------------------------------------------------------|
| Senior Agricultural Officer     | ... | P. L. HOTCHIN, B.Sc. Agric. (Leeds),<br>D.T.A. (Trinidad) |
| Agricultural Officer            | ... | C. M. COURTOIS, Dip. Agr. (Maur.)                         |
| Assistant Agricultural Officers | ... | E. FARLA<br>Vacant                                        |

In addition there is:—

- 1 Overseer Grade I

#### FISHERIES DIVISION

|                   |     |                  |
|-------------------|-----|------------------|
| Fisheries Officer | ... | J. DE B. BAISSAC |
| Chief Inspector   | ... | J. MOMPLÉ        |

In addition there are:—

- 3 Inspectors
- 3 Sub-Inspectors
- 16 Head Guards
- 36 Guards

#### TEA DIVISION

|                                   |     |                |
|-----------------------------------|-----|----------------|
| Tea Officer                       | ... | R. B. J. DEANE |
| Assistant Tea Officer             | ... | D. N. ANDREWS  |
| Superintendent of Tea Plantations |     | G. LALLMAHOMED |
| Assistant Agricultural Officer    | ... | Vacant         |

In addition there are:—

- 4 Overseers Grade II

#### CLERICAL STAFF

|                           |     |                                            |
|---------------------------|-----|--------------------------------------------|
| Chief Executive Officer   | ... | I. FÉLIX                                   |
| Senior Executive Officers | ... | R. S. BUGUTH<br>C.M.A. SEEYAVE             |
| Executive Officers        | ... | E. T. LAGAITÉ<br>B. P. SAWMY<br>J. WILMANN |

In addition there are:—

- 2 First Grade Clerks
- 13 Second Grade Clerks
- 3 Typist/Stenographers.



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# Annual Report of the Department of Agriculture for the year 1955

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## Policy

Details of many aspects of agricultural policy have received definition and clarification during the year. The Government's agricultural policy was outlined by the Governor during his Address at the opening of the new Session of the Legislative Council in February and this policy was subsequently debated and approved in Legislative Council on the 5th April. In November the Secretary of State for the Colonies forwarded a comprehensive report from his Agricultural Adviser on the visit paid by him to Mauritius at the end of 1954. On the 13th December the Government's plans for the development of the tea industry received the unanimous approval of the Legislative Council.

2. The policy of the Department of Agriculture has been revised in the light of the above and may be stated as in the succeeding paragraphs.

3. A primary objective is the provision and subsequent maintenance of an adequate cadre of trained staff within the Department. To achieve this end, the College of Agriculture is being enlarged and its teaching is to be diversified and strengthened, while, as from 1956 onwards, three scholarships are to be awarded annually for the specific purpose of training officers for the Department. Where specialist training overseas is essential, it is hoped to provide a long-term plan for study leave of serving officers adjusted to the requirements of the Department for specialist and senior professional staff. In the latter connection, approval has been obtained for local officers to proceed overseas next year to qualify for eventual appointment as Plant Pathologist, Agricultural Engineer and Livestock Officer (Poultry Husbandry) while other officers, already abroad, will continue studies in animal husbandry and agricultural chemistry. In the meantime, the critical shortage of professionally qualified and experienced officers continues and is a significant factor affecting both the teaching of the College of Agriculture and the extension work of the Department. Recruitment of expatriates on contract or secondment pending implementation of training schemes is an obvious temporary remedy, but little or no success has been achieved in this direction on a competitive market. During the year the key post of Lecturer in Agriculture at the College continued vacant and both the Lecturer and Assistant Lecturer in Sugar Technology resigned. Other resignations included the Senior Agricultural Officer in charge of the Agricultural Division and the Veterinary Officer, the Animal Husbandry Officer left before the end of his secondment, and the Chemist is due to retire after the end of the year. Apart from their routine duties in the Department, all these officers were concerned with part-time lecturing at the College and hence with the output of trained men for general extension work amongst the agricultural community. Replacements were, however, obtained in respect of Senior Agricultural Officer and Lecturer in Sugar Technology.



4. A second cardinal point of policy, dependent largely upon the first, is to set up an efficient agricultural extension service which will provide the farmer with readily available assistance and advice and rapidly translate into general agricultural practice the information obtained from the Experimental Stations. The necessary staff organisation has been prepared and, during the next five years, it is planned gradually to establish district centres and demonstration plots and to co-ordinate the work of the Agricultural Extension Service with that of the already established Animal Husbandry Extension Service.

5. Associated with both the preceding items of policy is the development of Experimental Stations in each of the major climatic zones of the Colony for the purpose of investigation, under competent supervision, of crops, stock and methods suited to the particular areas. All the proposed stations have been in existence for a number of years and, with the exception of Richelieu and Curepipe, capital development is now almost complete. Outstanding development plans call for purchase of mechanical equipment for Richelieu and extension of the cultivated area at Curepipe to enable investigation of crops and systems suited to the wet uplands. The permanent Experimental Stations of the Agricultural Division include:—

- (a) Richelieu, in the West, which incorporates the Tobacco and Fibre Research Stations and is the main centre for mechanised agriculture;
- (b) Pamplemousses, in the North, which is also a sub-station of the Tobacco Research Station and is associated with the Royal Botanic Gardens;
- (c) Le Réduit, in the intermediate upland zone;
- (d) Barkly, which is a specialized horticultural station; and
- (e) Curepipe, in the wet highlands. The Tea Division maintains an Experimental Station at Wootton while the Livestock Division has stations at Curepipe in the uplands and Palmar in the coastal lowlands.

6. The sugar industry is the main source of wealth and employment in the Colony and Government policy is to maintain that industry to the limits imposed by overseas markets. Following the establishment and gradual expansion of the industry's own Sugar Research Institute, experimental work with sugarcane is being surrendered to that body as and when it is ready to assume responsibility. As from the beginning of 1956, work on sugar technology will be transferred to the Institute, but the Department will retain responsibility for sugarcane entomology for the time being. Extension work with estates and large planters has been assumed by the Institute, but the Department will, in co-operation with the Institute, undertake similar work with its Extension Service in regard to small planters, having as one of its principal aims the raising of small planters yields per acre to a figure more comparable with that of estates. The department will maintain its other services to the industry, such as plant inspection work to prevent introduction of new pests and diseases, control of the Cane Quarantine Greenhouse, administration of the Central Cane Arbitration Board, etc. Departmental policy also includes close co-operation with the Sugar Research Institute, on whose Board and Research Advisory Committee it is represented.

7. The development of the tea industry has long been an item of policy. During the year this was given concrete form by the adoption of a departmentally prepared pilot scheme for the establishment, with Government assistance, of a further 3,000 arpents of planted tea by 1960 as the first stage towards an ultimate target of 15,000 arpents. Implementation of the scheme, which is described later in this report will commence next year. Tied with the main policy of expansion of the tea industry is that of improving yield, quality and factory efficiency so as to enable Mauritius to compete on the overseas market with other exporting territories with lower wage-rates.

8. The fibre industry is in economic difficulties due to falling prices coupled with the relatively high cost of harvest and decortication inherent in Mauritius hemp. Departmental policy of assistance consists mainly in making available to the Sack Factory the services of a technical officer, exploration of alternative uses for Mauritius hemp, experimentation in the Engineering Division on increasing efficiency and decreasing cost of decortication, cultivation experiments with Mauritius hemp (aloe) and trials of other fibre plants which might have possibilities as cheaper sources of raw fibre. Unfortunately, work by the Engineering Division will have to be temporarily discontinued in the near future owing to lack of staff.

9. In the absence of an export outlet, tobacco production is limited to the requirements of the local manufacturer for domestic leaf. The policy of the Department is to improve, by selection and hybridization, the yield, resistance to disease, and quality of the "New Varieties" (Virginian) with a view to replacing part, at least, of the manufacturer's imports of Rhodesian and American leaf and ultimately of exporting, should the overseas market conditions change. The aim is to provide the planter with Virginian types capable of giving a monetary return comparable with the present Amarello strains which, although popular with the planter because of high yields, freedom from disease and ease of cure, have a restricted and diminishing market. In short, policy is to provide Virginian types capable of re-capturing part of the local market presently held by imported leaf and imported cigarettes and suitable for entering the export market when conditions are favourable.

10. In a densely populated island largely dependent upon imported food-stuffs and where employment is to a great extent seasonal, the encouragement of increased production by small planters of cash and food crops must be a part of agricultural policy. In view, however, of the extremely limited availability of agricultural land, this production should be confined to crops which are of comparatively high value, which cannot more economically be imported, or which are of special nutritive worth. With these considerations in view the Department is giving priority to investigation of the cultural requirements of potatoes, the breeding of improved varieties of maize, the control of pests of pigeon pea, the acclimatization and bulk-production of improved strains of vegetable seed, and the testing of cropping programme suitable for small holdings in the different climatic zones. The deployment of the Agricultural Extension Service throughout the island, the detail of an

Agricultural Officer for school garden work in co-operation with the Education Department, and the proposed organization of vegetable clubs are all means of implementing the policy of increasing production of selected foodcrops.

11. A further item of policy is to resuscitate the production of citrus which has virtually disappeared from the island, due apparently to virus disease of the Tristeza type. Rootstock seed from South Africa and scion budwood from Trinidad have been introduced and nursery facilities enlarged with the object of producing virus-resistant budded plants of various varieties of citrus for distribution to the public. It is expected that the Department will be in a position to commence issuing plants during 1957. The presence of both Citrus Canker and Fruit Fly are, however, problems to be overcome.

12. The land settlement projects of the Department are now practically complete and recommendations have been submitted to the Government as to future policy.

13. So far as dairy cattle are concerned, the immediate objective of the Department's breeding policy is stabilization and improvement by selection of the *Creole* type. When this has been achieved, it is the intention to introduce a temperate climate breed, probably the Jersey, for use as a pure breed in the uplands and possibly for subsequent controlled cross-breeding with the *Creole*.

14. In regard to herd cattle upgrading with imported stud-bulls is being temporarily deferred until the present relatively high incidence of tuberculosis can be brought under a sufficient degree of control. The policy of repeated tuberculin-testing with elimination of reactors is showing promise of success and the percentage of reactors has been reduced from over 14 per cent last year to a little over 7 per cent this year. Impending shortage of veterinary staff may, however, seriously prejudice further progress.

15. Encouragement of local production of milk and meat within the limits imposed by the restricted availability of land for fodder and pasture is an item of policy which is being implemented in several ways. The Animal Husbandry Extension Service will continue to provide artificial insemination using selected bulls bred from the best milking strains at Palmar and Curepipe. This Service will also continue to improve fertility through pregnancy tests and correction of temporary sterility while maintaining advisory extension work on feeding, management and housing. The production of animal-feeds at the lowest possible cost will be progressively increased at the Richelieu Maize Mill and improved facilities for distribution provided through the proposed District Extension Centres. Financial provision has been ear-marked for investigation of the *Stomoxys* biting fly with a view to devising methods of control of this major pest of livestock: initiation of the scheme will, however, have to await temporary recruitment of an entomologist.

16. The economic production of milk is, however, dependent upon a solution of the increasingly difficult and complex fodder problem. The multiplicity of small cow-keepers depends upon external sources for their fodder. Semi-waste lands from which fodder can be gathered are rapidly disappearing since the advent of heavy land-clearing equipment which has enabled their conversion to cane cultivation or building use. At the same time,



the supply of fodder from the sugar estates is diminishing due to the shorter period during which cane-tops are available and due to the increasing use of herbicides. This progressive diminution of fodder has been accompanied by a steady increase in the numbers of milk cattle, while the whole problem is made more acute by the fact that little or no use is made of concentrates and other prepared feeds. The policy of the Department includes the introduction and testing of fodder varieties with the ultimate object of enabling the most intensive use possible of the land still available. To this end provision has been made on the Capital Expenditure Programme 1955-60 for establishment in three different districts of demonstration blocks of planted fodder as a preliminary to extension through farmers' co-operatives or local government bodies. A large experimental block is also to be laid down next year for the purpose of investigating whether natural vegetation can be significantly improved by management on presently unproductive natural grassland areas in the sub-humid western side of the island. Grazing and management trials are also to be laid down in the coastal belt of *Pas Géométriques* with the object of improving the natural sward of *Stenotaphrum dimidiatum*, a grass of comparatively poor feeding value. Investigations are to be continued into the economic possibilities of conservation of fodder by artificial drying, hay-making and ensilage. The production of ureated molasses, a low-cost feeding supplement and the proposed attempt to control *Stomoxys* so as to allow normal grazing are further items of policy bearing on the fodder problem.

17. Investigation of mechanisation as a means of improving the efficiency of the small farmer is to be undertaken at the Richelieu Experimental Station. Lines already being pursued are trials of light equipment for market-gardening, mechanical cutting of fodder, the use of light rolling brush-cutters and the use of overhead irrigation.

18. Agricultural development and rehabilitation in the over populated, eroded, and badly-farmed Dependency of Rodrigues is a major item of policy. An experienced and qualified officer has been recruited and a comprehensive agricultural development plan for Rodrigues submitted to Government.

19. Fisheries policy comprises conservation of the lagoon fisheries, development of off-shore fishing, and investigation of pond-culture of fresh water-fish.

20. Compilation of an up-to-date Land Utilization Map and the carrying out of a detailed Soil Survey are essential adjuncts to the determination of agricultural policy and to its successful implementation. The first operation is in progress with the assistance of the Directorate of Colonial Surveys: arrangements are in hand to initiate the latter, to be carried out by the Sugar Research Institute with the co-operation of the Department.

21. It is intended to maintain the policy of close co-operation with neighbouring territories under the auspices of the *Comité de Collaboration Agricole Maurice-Réunion-Madagascar*. The annual conference of this Committee was held in Mauritius in September and a programme agreed for exchange visits of agricultural workers and collaboration on problems of mutual interest, notably control of Fiji Disease in Madagascar.

### Board of Agriculture, Fisheries and Natural Resources

22. A separate annual report has been issued, but the main activities of this Board during 1955, its second year of existence, may be briefly summarized below:—

- (a) preparation of further recommendations to Government on the leasing and utilization of the *Pas Géométriques* for various purposes; e.g., tree planting leases, village sites, campement sites, industrial leases, coconut leases, reservation of public beaches;
- (b) submission of the report of the Maize Cultivation Committee containing recommendations as to cultivation and breeding policy;
- (c) preparation of a Five-Year Plan for the development and diversification of the natural resources of the Colony considered under the headings of legislative, educational and practical field measures;
- (d) adoption of a recommendation that an up-to-date Land Utilization Map of the Colony be prepared;
- (e) consideration of tea planting in relation to catchment areas;
- (f) submission of recommendations to the Government as to the enforcement of the close season for net-fishing;
- (g) submission of a recommendation to the Government concerning a local road project.

23. The following standing committees of the Board functioned during the year:—

- (a) Irrigation Committee—which gave routine advice to the Public Works Department on the distribution of irrigation water and also examined the advisability of initiating investigation of overhead irrigation of cane;
- (b) Cane Release Committee—which revised the list of approved varieties;
- (c) Land Settlement Committee—which advised the Department of Agriculture on the routine administration of the land settlements.

24. The Board also appointed the following *ad hoc* committees:—

- (a) Sand Quarries Committee—which reported on the utilization of quarries;
- (b) Oyster Culture Committee—which was re-appointed pending Government's consideration of its report, submitted last year;
- (c) Fisheries Advisory Committee—which has under consideration the organization and policy of the Fisheries Division of the Department of Agriculture;
- (d) Net Permits Committee—which dealt with the allocations of fish-net permits for the year;

The following committees were also under consideration at the end of the year:—

- (a) Pig Keeping Committee—to examine and make recommendations in regard to a local pig industry. This has, however, not commenced work pending Executive Council approval;
- (b) Bee Industry Committee—to which the above remark also applies.

### **The Mauritius Chamber of Agriculture**

25. The ready co-operation and assistance which has been at all times extended by the Chamber to the Department is again gratefully acknowledged. The statistical staff of the Chamber have been particularly helpful.

26. As in previous years, the Chamber assisted in the preparation of the estimates of the Central Board and was represented on various boards and committees associated with the Department, notably the Board of Agriculture, Fisheries and Natural Resources, the College of Agriculture Advisory Board, the *Comité de Collaboration Agricole Maurice—Réunion—Madagascar*, the Mauritius Sugar Industry Research Institute Board, the Sugar Industry Rehabilitation Fund Committee, the Sugar Industry Reserve Fund Committee and the Sugar Millers' Rehabilitation Fund Committee.

### **College of Agriculture**

27. The College continued to be administered as a Division of the Department of Agriculture with the guidance of the College Advisory Board. During the year, at the instance of the Liaison Officer for Agriculture, the Board had under consideration the advisability of the creation of an autonomous College, under a Board of Governors, with its own instructional farm or farms. In this connection, proposals were drafted by a sub-committee of the Board and, at the request of the Board, a detailed estimate of cost was prepared by the Director of Agriculture. The comments of the Chamber of Agriculture were invited and, at the request of the Chamber, the Liaison Officer and the Director of Agriculture met the Bureau of the Chamber for discussion of the matter. Subsequently, after studying the report of the Board's sub-committee, memoranda thereon prepared by the Liaison Officer and the Director of Agriculture respectively, and the estimates of capital and recurrent cost for an autonomous College, the Chamber of Agriculture advised against the project.

28. The same courses were offered as before; namely, a three-year course for the Diploma in Agriculture, a one-year course for the Certificate in Tropical Agriculture Cane Cultivation, and an eighteen-month course for the Certificate in Sugar Analysis. The Sugar Analysis course was started last year with the object of training laboratory staff for the Sugar Estates and the Central Board; but the response was poor and the course will be discontinued in 1956 unless sufficient candidates come forward.

29. The College Advisory Board has appointed a sub-committee, under the chairmanship of the Principal, to revise the syllabus and regulations of the College. It is expected that this sub-committee will complete its task in time to enable issue of an up-to-date edition of the Syllabus and Regulations by the start of the 1956-57 academic year.

30. Work has commenced on the approved extension of the College and it is hoped that the new building, as well as alterations to the old main building, will be complete by the middle of 1956. Nearly Rs 306,000 have been voted to cover the cost of the new building, its equipment and fittings, alterations to the old building, and erection of a cow-byre and potting-shed. This extension will allow a larger intake of students so as to satisfy the increasing demands of both agricultural industry and the Department of Agriculture for trained personnel.



31. In the above connection, it may be noted that Government has approved the grant of three scholarships annually to enable the holders to take the Diploma course. The value of these scholarships is Rs 1,800 a year with free tuition and travelling. The scholars will be bonded to enter Government service, if so required, on successful conclusion of the course. The intention is to provide a source of recruitment for technical posts in the Department of Agriculture. The first three scholarships will be awarded for the academic year 1956-57.

32. The staff position has been very unsatisfactory and the teaching routine has been maintained only through the assistance of members of other Divisions of the Department. This has been at great inconvenience and to the detriment of the general work of the Department, which itself is sadly short of professional officers. The post of Lecturer in Agriculture remains vacant, as it has been in spite of repeated advertisement, ever since it first appeared in the Colony's Estimates, and unless this key position can be filled by an officer of suitable experience, it is considered that the teaching of practical agriculture at the College will remain deficient. The Lecturer in Sugar Technology and Engineering, who was on secondment to the Central Board for the entire year, resigned as from the end of December to join the Sugar Research Institute, but fortunately his duties were carried out by a satisfactory temporary replacement. The Assistant Lecturer in Sugar Technology resigned during the course of the year to accept employment in the sugar industry and advertisement of the resulting vacancy did not secure a single qualified applicant. It is hoped, however, that the last-named vacancy can shortly be filled by transfer from the Engineering Division, which relinquishes work on sugar technology to the Sugar Research Institute as from the beginning of 1956.

33. The total number of students at the College was 61 as compared with 55 in 1954. Distribution was:—

|                                                  |     |     |     |     |     |     |    |      |
|--------------------------------------------------|-----|-----|-----|-----|-----|-----|----|------|
| Diploma Course                                   | ... | ... | ... | ... | ... | ... | 34 | (27) |
| Tropical Agriculture and Cane Cultivation Course | ... | ... | ... | ... | ... | ... | 9  | (9)  |
| Sugar Analysis Course                            | ... | ... | ... | ... | ... | ... | 7  | (7)  |
| Part-time                                        | ... | ... | ... | ... | ... | ... | 11 | (12) |

The figures in brackets refer to 1954. It is of interest that, for the first time, two students from Reunion entered the College.

34. At the annual examinations held in April 1955, all six Third-Year students were successful, three being awarded the Honours Diploma and three the Pass Diploma. The two diplomates with the highest aggregates for the entire course were awarded scholarships for overseas study—one of these left in September to take a degree in Horticulture at Wye College, University of London; but the other accepted crop-time employment on a sugar estate and subsequently altered his choice of course and university, with the result that the arrangements for his scholarships are not yet concluded. In the second year examinations, seven out of nine candidates were successful; of the failures, one was allowed to repeat the year, but the other was requested to withdraw as, having already been in attendance for three years, he would be unable to complete the course within the prescribed maximum period. Nine

out of twelve first year students passed, two were permitted to repeat and one was sent down on account of failure for the second time. On the whole, especially in the first year, examination results were better than last year.

35. Five students were awarded the Certificate in Tropical Agriculture and Cane Cultivation and four the Certificate in Sugar Analysis. The latter all obtained crop-time employment with the Central Board.

36. Six graduates of the College sat the City and Guilds of London Institute examinations in Sugar Manufacture and all were successful, five obtaining First Class Honours and one Second Class Honours.

37. The College was honoured by the presence of His Excellency the Governor at the annual prize-giving held on the 30th June.

38. The Director of Agriculture wishes to acknowledge the valuable assistance and constant support afforded to both himself and the Principal by the College Advisory Board.

### **Mauritius Sugar Industry Research Institute**

39. The Research Institute has now completed its second year of independent existence and a full account of its activities is available in its Annual Report for 1955.

40. Pending delivery of alternative accommodation which Government has agreed to sell to the Institute, the main offices and part of the laboratories continued to be temporarily housed in the Department's buildings at Reduit, much to the inconvenience of both organizations. Apart from this, development of the Institute has steadily progressed. The new chemistry, foliar diagnosis and cane analysis laboratories at Reduit were opened in July, while establishment of the Sugar Experiment Stations in the three main climatic zones (at Belle Rive, Union Park and Pamplemousses respectively) is virtually complete.

41. Recruitment of professional staff has also proceeded satisfactorily. The former Senior Agricultural Officer of the Department joined the Institute's staff as Plant Pathologist in March, enabling a Division of Plant Pathology to be added to the existing Field Experimentation, Agronomy, Botany, Plant Breeding and Chemistry Divisions.

The Lecturer in Sugar Technology of the Agricultural College Division of the Department, who was acting as Registrar of the Central Board during 1955, has similarly resigned to accept the appointment of Sugar Technologist in the Institute as from 1st January, 1956. With the initiation of a Division of Sugar Technology, the Institute will, from the beginning of 1956, be engaged in research in all the major technical fields affecting the sugar industry with the exception of Entomology. Owing to the lack of accommodation already referred to, the Institute will perforce have to postpone the start of studies on sugar-cane entomology for some two or three years. In the meantime, the Entomological Division of the Department will, in addition to its work on other crops, continue to co-operate with the Institute on sugar-cane work.

42. In order to ensure adequate funds during the early developmental stages of the Institute, Government, at the request of the Institute's Executive Board, increased the cess on exported sugar payable to the Institute from Rs 2.00 to Rs 2.50 per ton with effect from the 15th December.

43. Details of the research work carried out by the Institute during 1955 can be obtained from the Institute's Second Annual Report. The following brief notes may, however, be included here. The breeding, selection and testing of cane-varieties has continued. In regard to work on nutrition and soils, studies of the chemical composition of cane-juices have been started, fertilizer trials were continued, as was routine foliar diagnosis as a guide to fertilizer practice, while field cultivation trials were carried on. The Plant Pathology Division concentrated on Ratoon Stunting and Chlorotic Streak, diseases prevalent in the wetter districts and which are of special importance under Mauritius practice of long ratooning: investigation is also to be commenced of the hot water treatment of cane setts against these diseases. The Botany Division pursued its studies on the use of herbicides for weed-control. The Field Experimentation Division successfully developed a device for mechanical loading of cane in the field for tractor-transport.

44. The Institute and the Department of Agriculture continued to work in close co-operation and harmony. The Department was represented on the Institute's Executive Board by the Director of Agriculture and on its Research Advisory Committee by the Director of Agriculture, the Senior Agricultural Officer (Extension) and, temporarily, the Entomologist.

### The Sugar Industry.

45. The 1955 crop resulted in a record production of 533,341 metric tons of sugar, exceeding by over 21,000 tons the previous record established in 1953.

46. Comparative figures for the last three years are tabulated below:—

| Year | <i>Arpents under Cane</i> |                  | <i>Cane Ground<br/>(metric tons)</i> | <i>Sugar made<br/>(metric tons)</i> |
|------|---------------------------|------------------|--------------------------------------|-------------------------------------|
|      | <i>Total</i>              | <i>Harvested</i> |                                      |                                     |
| 1953 | ...                       | ...              | 4,642,740                            | 512,225                             |
| 1954 | ...                       | ...              | 4,280,078                            | 498,560                             |
| 1955 | ...                       | ...              | 4,227,758                            | 533,235                             |

| Year | <i>Sucrose<br/>% Cane</i> | <i>Tons per Arpent</i> |              | <i>Yield<br/>Sugar % Cane</i> | <i>Average Grinding of Factories</i> |                          |             |
|------|---------------------------|------------------------|--------------|-------------------------------|--------------------------------------|--------------------------|-------------|
|      |                           | <i>Cane</i>            | <i>Sugar</i> |                               | <i>Tons cane<br/>per Hour</i>        | <i>Hours<br/>per day</i> | <i>Days</i> |
| 1953 | ... 12'96                 | 27'8                   | 3'06         | 11'03                         | 65'5                                 | 19'2                     | 134         |
| 1954 | ... 13'44                 | 25'4                   | 2'96         | 11'65                         | 67'8                                 | 19'4                     | 119         |
| 1955 | ... 14'24                 | 25'1                   | 3'17         | 12'61                         | 69'5                                 | 19'8                     | 113         |

47. From the above, it is obvious that the record sugar production this year is the result of improved cane quality and has been achieved despite a drop in cane tonnage. Two main factors, climatic and varietal, have been involved in the marked improvement in sugar-content of the cane and purity of the juice. To a lesser extent the shortening of the crop period has contributed by allowing a greater proportion of cane to be reaped at the time of optimum maturity.



48. A period of comparative drought, which lasted from the middle of December 1954, until terminated by the close passage of cyclones at the end of February and in early March of 1955, affected the growth of cane and was responsible for the somewhat low tonnage per arpent. Subsequently, however, good growing conditions prevailed until the start of the harvest and after that weather was almost ideal for ripening the cane, resulting in the exceptionally high sugar-content which characterised the 1955 crop season. The cool dry weather which was so beneficial to maturity during the 1955 harvest also, to some extent, retarded growth of canes for cutting in 1956. This, however, was later offset by above-normal rainfall during December 1955, in all districts except the west. Prospects, so far, for the 1956 harvest are good.

49. A higher proportion of the sweeter varieties, especially Ebene 1/37, has been the second major reason for improved cane quality. The variety M.134/32 again constituted the greater proportion of the cane reaped, but a significant change in the varietal position is presaged by the fact that for the first time it has been exceeded by Ebene 1/37 in the acreage planted during the year. Substitution of Ebene 1/37 for M.134/32 has been most noticeable in the wetter regions of the east and centre of the island. The 1955 plantings also included increased proportions of the Barbados canes. The Cane Release Committee met in December and recommended the release of the varieties M.147/44, M.31/45 and B.34104 for general cultivation. Of these M.147/44 is expected to be specially valuable on account of its early maturity and high sucrose-content. In this connection, it may be mentioned that one of the greatest needs of the Mauritius sugar industry is for earlier maturing varieties: an illustration of this is that during the 1955 crop, which was typical in that better maturity coincided with the latter part of the crop-season, the average sucrose content of the cane gradually increased from 12.30 per cent to 14.26 per cent between July and September and again from 14.74 per cent to 15.35 per cent during the period October to November, the related extraction of sugar per cent cane rising from 11.03 to 12.70 between August and September and again from 13.24 to 13.60 between October and November. An increase of 50,000 tons of sugar from the same tonnage of cane as at present ground is quite possible if the breeding programme of the Research Institute is successful in producing suitable early varieties. The Mauritius varieties under cultivation have continued to exhibit their exceptional ratooning ability and Mauritius is probably unique amongst cane-growing territories in that cane is carried for six or more ratoons with an average decrease in yield of only some 8 tons per acre between plant-cane and sixth ratoons and in that about 90 per cent of the acreage reaped annually is under ratoon cane. The effect of this on cultivation costs needs no elaboration.

50. As may be seen from the figures at para. 47, average factory capacity has again increased. This has been mainly due to progress of the factory rehabilitation programme, under which nearly 21 million rupees were spent during the year, bringing total expenditure for this purpose since 1946 to almost 190 million rupees. The aims of this scheme are to enable a steady improvement in factory efficiency and to increase capacity so as to deal with the entire cane crop during the period of optimum maturity. Factory

rehabilitation is, in the main, directly financed by the millers, but a minor proportion of the expenditure has been met from the Sugar Millers' Rehabilitation Fund which, like the associated Sugar Planters' Rehabilitation Fund, derives its income from a cess on export of "negotiated price" sugars.

51. Satisfactory labour relations, mechanical efficiency and good reaping weather all combined to produce a further increase this year in the average hours grinding per day.

52. Cost of bags showed a further reduction this year, being Rs 15.76 per metric ton of sugar as compared with Rs 15.92, Rs 20.42 and Rs 26.10 in the three preceding years.

53. As in previous years a proportion of the sugar crop was exported in bulk. Inclusive of 8,963 tons exported after the end of the calendar year against the 1955 "negotiated price" quota, 149,192 metric tons were so dealt with as compared with 141,000 and 151,000 in 1954 and 1953 respectively. Pending provision of bulk loading facilities, the practice of emptying bagged sugar by hand into the hold was continued. For this purpose, the Sack Factory has been manufacturing a reinforced bag capable of re-use.

54. The pilot project for inland transport of sugar by road was continued by one sugar estate in the South with the same success as in the previous year.

55. Under the Commonwealth Sugar Agreement, Mauritius is allocated an export quota of 351,000 long tons to the United Kingdom at the "negotiated price" within an overall quota of 470,000 long tons exportable to preferential and "negotiated price" markets. These quotas are within the framework of the overriding International Sugar Agreement.

In 1955, due to shortfalls in other Commonwealth sugar-producing territories, the overall quota of Mauritius under the Commonwealth Sugar Agreement was readjusted to 480,568 long tons (488,257 metric tons).

56. Exports during the calendar year were as follows:—

|                          | <i>Long tons</i> |     |     |                                |
|--------------------------|------------------|-----|-----|--------------------------------|
| To United Kingdom ... .. | ...              | ... | ... | 387,402                        |
| To Canada ... ..         | ...              | ... | ... | 91,584                         |
| To Japan ... ..          | ...              | ... | ... | 100                            |
| To Penang ... ..         | ...              | ... | ... | 600                            |
| To Seychelles ... ..     | ...              | ... | ... | 1,125                          |
| TOTAL EXPORTS ... ..     |                  |     |     | 480,811 (488,521½ metric tons) |

57. The above includes 12,930 long tons (13,137 metric tons) actually shipped to the United Kingdom after the end of the year but claimed against the 1955 "negotiated price" quota. In that exports to the Seychelles are accounted for as local sales in the terms of the Commonwealth Sugar Agreement, it may be seen that, during the year, exports, accountable as such for quota purposes, amounted to 479,686 long tons. About 86,400 tons of this was from the previous year's crop. Sugars from the 1955 crop remaining to be exported against the 1956 quota total nearly 109,000 long tons.

58. The "negotiated price" in respect of 1955 was £40-15/- a reduction of 5/- per ton on that of the previous year. At the end of the year the welcome news was received that the 1956 price had been fixed at the same level and that the Agreement had been again extended for a further year to 1963. As in previous years, the "negotiated price" sugars were subject to cess for the benefit of the Labour Welfare, Sugar Industry Rehabilitation and Cyclone and Drought Insurance Funds, while all sugars exported were levied on in respect of the Sugar Industry Reserve Fund, the Central Board and the Sugar Research Institute. In the last regard, as from the middle of December the cess was increased from 10 to 12½ cents per 50 kilos.

59. Provided that there is no unexpected set-back to the industry from climatic causes or from the introduction of new pests or diseases, steadily increasing sugar production may be anticipated even though a significant increase in the total cane acreage is unlikely. Although Mauritius has not yet reached a position comparable with other territories where accumulation of carry-over stocks has forced legislation to restrict cane-growing, there is little, if any, margin between production and export quota. In the circumstances it is of concern that the general statistical position of sugar has shown no improvement during the year: in fact, the International Sugar Council had, at the end of the year, to impose a 10 per cent cut in basic export tonnages. It is encouraging to note, however, that, since the end of the year, the Commonwealth export quota under the International Sugar Agreement has been increased by 75,000 tons and that Mauritius is likely to receive a share of some 15,00 tons of this: this increase, however, does not affect the Commonwealth Sugar Agreement and only covers sales to the free market at world prices.

60. A visit was received in July from Mr E. P. Keely, an under secretary in the U.K. Ministry of Agriculture, Fisheries and Food, who has been concerned with the annual price-fixing negotiations under the Commonwealth Sugar Agreement.

61. Only three distilleries operated during the year. Production of alcohol amounted to 1,800,983 litres at 100°G.L., of which the greater part was used locally as either rum or denatured spirit. Exports were only 30,058 litres, shipped to Hong Kong. These figures, while representing slight increases over the previous year, contrast with production and export figures of nearly 6 million and 5 million litres respectively as recently as 1952. In the absence of any appreciable export outlet for hydrated alcohol distilleries are presently confined to satisfying the local requirements for rum and denatured alcohol. Enquiries into the possibilities of production of anhydrous alcohol for motor-fuel and of rum of export quality have not yet yielded any tangible results.

62. Molasses production, at 106,839 metric tons, was 13,656 tons less than last year. This, of course, was the result of a slightly smaller cane crop and higher juice-purities. Exports were 53,957 metric tons as against 89,912 last year: that is, slightly more than half the total molasses production was exported this year as compared with nearly three-quarters in 1954. Export value f.o.b. per ton was Rs 54.51 as against Rs 50.18 last year. The difference



between the proportion of production shipped this year and last does not indicate any significant change in market trend, being governed mainly by shipping space and storage facilities. The unexported balance was used mainly for fertilizer, with smaller amounts for the distilleries and for feeding livestock. Exports were mainly to the United Kingdom and the United States of America.

63. There has been little progress in projects for the utilization of surplus bagasse. The Department of Agriculture has continued manufacture of a urea-molasses-bagasse mix for cattle-food, sold at Rs 100 per ton; but public demand has been extremely limited. Enquiries have been made as to the possibilities of an export trade in this product, in a compressed and baled form, but it appears that the use of urea in animal feeding-stuffs is prohibited by law in the United Kingdom.

64. The Central Board held 34 meetings during the year, most of which were concerned with assessment of sugar due to planters and changes in factory areas. In accordance with recommendations of the Board and of the Chamber of Agriculture, the chemical staff of the Central Board Division was enlarged so as to enable wider coverage of factories and an increased number of sucrose tests during the crop. As in previous years, departmental staff continued their functions in regard to registration of cane contracts, issue of permits to middle-men, inspection of weighbridges, cane-testing, determination of costs and preparation of data for submission to the Board. There was no substantial alteration during the year to the Sale of Canes (Control) Ordinance under which the Central Board operates.

65. The Sugar Planters Mechanical Pool, operated by the Sugar Planters Rehabilitation Fund Committee, maintained their service to the smaller planters and some 600 arpents of land were mechanically de-stoned during the year.

66. Routine foliar diagnosis was provided by the Sugar Research Institute as a guide to manurial practice, results being communicated direct to large planters and through the Agricultural Extension Service to small planters.

### Fibre

67. The position of the fibre industry, already in grave economic plight suffered further deterioration during the year. The prices paid for fibre by the Government Sack Factory were again reduced by 10 per cent under the terms of the Tripartite Agreement and are now definitely marginal for producers. The Sack Factory itself suffered another financial loss in spite of reduced overheads due to increased production.

68. The prices paid locally for fibre are governed by the Tripartite Agreement (between fibre producers, the Sack Factory and sugar millers) whereby the price of local bags is regulated according to that of imported jute bags, subject to a maximum fluctuation of 10 per cent between successive years. As was the case last year, a reduction of 10 per cent became effective and the prices received by producers per ton for first and second grades of brushed fibre were Rs 1,145 and Rs 1,116 as compared with Rs 1,272 and Rs 1,240 respectively during the latter part of 1954.

69. Prospects in regard to the local market are gloomy. Prices already tend to be unremunerative and the demand for sacks, reduced by the advent of bulk-loading of sugar, may disappear to a great extent when the Tripartite Agreement expires in 1958, since the present intention of the millers is to rely on the cheaper imported bags after that date.

70. Prevailing conditions in regard to price and demand for hard fibres in the overseas markets offer little promise of a profitable export outlet for Mauritius aloe fibre.

71. The main statistics in regard to the fibre industry are tabulated below:—

|                                      | 1953      | 1954      | 1955      |
|--------------------------------------|-----------|-----------|-----------|
| Factories operating (No.) ...        | 39        | 36        | 30        |
| Wild Aloe Fibre, arpents ...         | 12,293    | 14,603    | 9,518     |
| Planted Aloe Fibre, arpents ...      | 2,756     | 2,521     | 1,784     |
| Planted Sisal, arpents ...           | 400       | 625       | 377       |
| Aloe Fibre produced, metric tons ... | 2,177     | 1,972     | 1,652     |
| Sisal Fibre metric tons ...          | —         | 7         | 70        |
| Local Sales, metric tons fibre ...   | 2,069     | 1,882     | 1,593     |
| Exports, metric tons fibre ...       | 143       | 58        | 186       |
| Value, Local Sales in rupees ...     | 2,679,199 | 2,247,593 | 1,765,630 |
| Value, Exports in rupees ...         | 76,029    | 25,007    | 99,565    |

72. The reduction in the number of operating factories and in the acreage of fibre is the result of falling prices. Wherever rainfall is sufficient or irrigation available, the tendency is to replace fibre by other crops, mainly sugarcane. A further fall in price next year would probably result in a great increase in the number of factories going out of operation.

73. The export sales, as usual, have consisted mostly of cuttings.

74. Comparative figures in regard to the working of the Government Sack Factory are:—

|                                  | 1953      | 1954      | 1955      |
|----------------------------------|-----------|-----------|-----------|
| Fibre processed, metric tons ... | 1,197     | 2,187     | 2,905     |
| Bags produced (80 kilo cap.) ... | 1,203,750 | 2,239,222 | 2,687,369 |
| Filterpress cloth, yards ...     | 34,581    | 40,049    | 64,332    |
| Other Fabrics, yards ...         | 732       | 4,510     | 5,658     |
| Yarn for rope, kilos ...         | 8,649     | 15,865    | 8,404     |

75. The loss on the year's working was Rs 316,495 which represents a considerable improvement on the operating losses of approximately Rs 800,000 and Rs 600,000 in 1954 and 1953 respectively. This has been due to increased throughput, better quality fibre and higher industrial efficiency.

76. It will be obvious from comparison of the figures for fibre produced by the fibre factories and fibre processed in the Sack Factory that carry-over stocks have been greatly reduced and that, with the further reduction in production that is probable during 1956, next year's operations at the Factory will have to be greatly curtailed unless it is decided to supplement available supplies by imports of fibre.

77. Towards the end of the year the Sack Factory Board decided on a general reorganization of the Sack Factory aimed at increasing efficiency and lowering costs. Amongst other economies retrenchment of personnel was effected.

78. Experimental work at the Richelieu Fibre Experimental Station has consisted mainly in some not very conclusive cultivation trials with aloe fibre, observation trials with the soft fibres Roselle, Kenaf and *Urena lobata*, and the development of a prototype automatic decorticator-feeding device which has shown itself capable of increasing six-fold the output of the standard raspador.

79. *Urena lobata* seed, introduced from the Gold Coast, was planted too late in the season to yield any useful data, but the plot served to provide seed which will be used, together with further introductions from the Gold Coast, for observational trials next year in regard to time of planting, spacing, etc. A small amount of fibre from the Gold Coast was satisfactorily processed in the Sack Factory and arrangements are in hand to import a larger consignment of urena fibre for industrial tests for the information of both this Department of Agriculture and that of the Gold Coast. Work on Urena is to be continued as it is considered that, being a short-term crop which can be readily mechanised as regards sowing and reaping, it may offer prospects as a catch-crop on sugar-estates yielding a high-quality soft fibre for supplying the Sack Factory.

80. The automatic leaf-feeder produced by the Engineering Division has increased the capacity of the standard raspador three times and reduced labour-requirement by half. It is proposed to apply for a patent in respect of this machine.

81. The future of the fibre industry is doubtful. The basic difficulty is that Aloe Fibre (*Furcraea*) is expensive to reap and decorticate and cannot, under present conditions, be produced at a competitive price on the local market, much less overseas markets.

Whether or not aloe fibre can find a secure export outlet will largely depend upon whether special uses can be developed for which it is more suitable than the other hard fibres in world trade. Locally the main prospect, other than the exercise of the utmost economy in both the fibre factories and the Sack Factory, would appear to be the development of an alternative source of cheaper fibre, in the form of a short-term annual adaptable to mechanisation in the field, such as *Urena*, which could supplement and reduce the cost of supplies of raw fibre to the Sack Factory.

### Tea

82. The area under tea increased slightly, permits to plant a further 111 arpents being granted during the year. Figures given in previous years for tea acreages have been found to be over-estimates based on planting permits not all fully utilized. Subject to a further check of small-holdings, it appears that, at the end of the year, total acreage actually under tea was 2,489 arpents, of which 2,017 were in bearing.

83. Two of the five tea factories are engaged in extension and improvement of plant.

84. For the tenth successive year production was increased. Total production for 1955 was 1,340,026 lbs. of black tea and 1,822 lbs. of green tea (compared with 1,142,987 and 1,643 lbs. respectively in 1954). Output of tea has approximately doubled over the last five years.



85. Exports also continued their progressive increase, being 377,467 lbs. as against 249,673 lbs. in the previous year. Three manufacturers exported during the year, as compared with two in 1954, but the Bois Chéri factory continued to be the main exporter. Most of the tea exported was sent to the London market, but small amounts were also sold to South Africa, Holland, Reunion, Madagascar, New Zealand, the Seychelles and France. The average price realized on the London market was about 3/7½d. per lb. as against 6/- last year. Total f.o.b. value of tea exports reported by the Customs was Rs. 941,318.

86. Imports during the year, used in part by manufacturers for blending with local teas, totalled 35,150 lbs. of a c.i.f. value of Rs 124,094. These figures do not differ appreciably from the previous year.

87. Local consumption of tea during the year is estimated at 967,000 lbs. From this, it will be seen that Mauritius tea production has now reached the stage where export is obligatory. The local market is still, however, the main outlet and also the more remunerative.

88. Overall yield of made black tea per bearing arpent was about 664 lbs. This represents a further improvement on previous years in spite of the adverse effect of the period of comparative drought which occurred during the main cropping months of January and February. Results from the Assam type high jats confirmed previous indications that mature tea of this type is capable of averaging well over 1,000 lbs. per acre in the Mauritius highlands. A steady increase in yield per acre for the Colony may be anticipated in the future as plantings of the newer jats come into bearing; but no spectacular increase will be obtained until after new cultivations are sufficient in extent to allow a general programme of uprooting and replacement of the old widely-spaced and inferior local jats which still constitute the greater part of the Mauritius tea acreage. Attainment of this long term objective of a high average yield of good quality tea is an essential if Mauritius is successfully to place increasing amounts of tea on an export market which is largely supplied by other countries with much lower wage-rates.

89. Development of the two Government tea properties, the Tea Experimental Station at Wooton and the Midlands Plantation, is well advanced and it is expected that, by next year, they will both have reached the planned limits in regard to planted acreage, buildings and ancillary works. When small outstanding plantings are completed next year, Wooton will have 70 acres of tea and Midlands about 233 acres: the former is to be used for experimental purposes, the latter is to be managed commercially. In addition, the Department maintains seed-bearer plots of 9 acres at Parc-aux-Cerfs and 3 acres at Midlands, and has commenced clearing operations to establish a third seed-garden of 12 acres at Nouvelle Découverte in an area sufficiently isolated to preclude cross-pollination.

90. Owing to the necessity of securing adequate seed supplies for the extension of the industry and the uncertainty in regard to availability of imports from East Africa, some 14 acres of selected bushes, spread over 60 acres at Midlands, have been withdrawn from plucking and are being allowed

to run to seed with a view to supplementing the production from the regular seed-gardens. At the same time, layering experiments have been initiated at Wooton to test the practicability of vegetative propagation as an alternative to establishment by seed.

91. The work of the Department has been limited by inadequacy of staff in the Tea Division. The vacancy for Tea Officer was satisfactorily filled in the early part of the year and this officer has subsequently been engaged on detailed planning, inclusive of legislative and financial measures, for the development of the industry. The Assistant Tea Officer has been fully occupied with the supervision of the Wooton and Midlands properties and routine statutory duties under the Tea Industry (Control) Ordinance. No specific staff has been available for extension duties amongst small-holders, whose standards are undesirably low, or for advisory service to factories with the object of improving the quality of manufactured tea. In these connections, however, recommendations have been made to the Government for provision in next year's Estimates both for additional staff and for the institution of a Broker's Report Service which will give up-to-date information on the requirements of the London market in regard to quality of manufactured tea.

92. During the year a short-term programme was prepared departmentally to serve as the first stage of a project for large scale development of the tea industry. This initial development scheme, as amended and approved by the Tea Committee, is intended to provide a further 3,000 arpents of tea by 1960 as part of a project for a first target of a total of 15,000 acres of tea by a date as yet unspecified. The proposal moved by the Liaison Officer for Agriculture, that expenditure of approximately Rs 4 million be incurred to develop a further 3,000 arpents of tea, was debated in the Legislative Council on the 13th December and unanimously approved. The scheme, to be incorporated in the Colony's Capital Expenditure Programme 1955-1960, is designed to allow the Department to establish 400 acres of planted tea on Crown land for subsequent lease to small-holders and to assist larger planters to clear and plant 1,600 acres of leasehold Crown land as well as 1,000 acres of freehold lands. This assistance includes provision of access roads, free seed supplies, and subsidies in respect of land clearing, housing for labour, and fertilizer. Concurrently with this scheme, the Government has made provision for loans to factories to increase capacity to deal with the resulting crop. It is envisaged that, should this preparatory scheme be successfully implemented, subsequent development, especially in regard to small-holdings, will be both more economical and more efficient, since the Department will already be in possession of the land-clearing equipment and there will, by then, be a more general knowledge of the technique of tea-planting amongst prospective growers.

93. The Tea Committee also considered and recommended to Government draft legislation for the purpose of introducing a greater measure of uniformity into the retail marketing of tea. At present Mauritius tea is placed on the local retail market by a multiplicity of small packers and blenders who use a variety of trade-names, pack in a wide range of weights and prices, and generally fail to maintain a standard product. \*Ordinance, 1955, (No. 32 of 1955) which was enacted in November and becomes effective in April 1956,

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\* The Tea Industry Control (Amendment).

restricts packing and blending to registered tea factories under the manufacturer's trademark. This is to be followed by Regulations limiting and standardizing the number of retail packets of different weights. Consideration will also be given to setting a maximum retail price for the various standard packets of both local tea and blends of local with imported tea.

94. Another matter of vital importance to the tea industry that has been engaging the attention of the Tea Committee is the setting-up of adequate machinery for ensuring an equitable distribution of proceeds between the manufacturer and the supplier of green leaf. The Committee has submitted to the Government a scheme which is an adaptation of a price fixing formula in present use in East Africa. In essence, the scheme is one by which the planters receive from the manufacturer the proceeds of the tea made from their leaf less the manufacturing and marketing costs and a small profit to the manufacturer. It is hoped that the scheme can be made effective by the time that planters' contracts are due for renewal in July next year.

95. During the year visits were received from persons interested in the Mauritius tea industry, notably the representative of a firm engaged in tea-planting in India and an official of the Reunion Department of Agriculture. The Tea Officer visited Reunion and Madagascar under the auspices of the *Comité de Collaboration Agricole Maurice-Réunion-Madagascar*.

### Tobacco

96. In the continuing absence of any significant export outlet, production was strictly limited by the Tobacco Board to the estimated requirements for domestic leaf of the British-American Tobacco Co. (Mauritius) Ltd.

97. Owing to some extent to over-quota production in past years, the 1955 crop had to be restricted below normal so as to allow the manufacturer to reduce accumulation of stocks. The table below shows the permits issued by the Board and the actual crop results for the 1955 season:—

|                          |     | <i>Permits Issued</i> |                | <i>Actual Production</i> |                |
|--------------------------|-----|-----------------------|----------------|--------------------------|----------------|
|                          |     | <i>Arpents</i>        | <i>Kilos</i>   | <i>Arpents</i>           | <i>Kilos</i>   |
| Flue-cured Amarello      | ... | 196                   | 170,000        | 193                      | 204,828        |
| Flue-cured Virginian     | ... | 228                   | 81,000         | 229                      | 88,918         |
| Total Flue-cured         | ... | 424                   | 251,000        | 422                      | 293,747        |
| Air-cured Amarello       | ... | 66                    | 51,000         | 66                       | 74,317         |
| Total—Mauritius          | ... | 490                   | 302,000        | 488                      | 368,064        |
| A. C. Amarello Rodrigues | ... | —                     | 1,550          | —                        | 261            |
| <b>TOTAL</b>             | ... |                       | <b>303,550</b> |                          | <b>368,325</b> |

98. The issue of permits for production of 303,550 kilos of leaf-tobacco in 1955 compares with 397,600 kilos in 1954 and 565,000 in 1953. In order to fit the manufacturer's requirements, the Board reduced the previous year's allocations of air-cured Amarello and flue-cured Virginian by 85,050 kilos and 9,000 kilos respectively, maintaining the same figure for flue-cured Amarello. The total reduction on permits from the previous year was therefore 94,050 kilos.



99. The actual production of 368,325 kilos, made up of 298,747 kilos of flue-cured and 74,578 kilos of air-cured compares with 471,282 kilos in 1954 (296,901 kilos flue-cured and 174,381 kilos air-cured). Over quota production, at 64,775 kilos, was again high.

100. It is expected that, as a result of the anticipated reduction of manufacturer's stocks, it will be possible to issue licenses for at least 400,000 kilos of leaf per annum for domestic use during the next few years.

101. The Tobacco Board has under consideration a revision of its basic acreage allocations with a view to reducing the over-quota production which, has had an unsettling effect on both the Board's and the manufacturer's estimates during the last few years.

102. Yields per arpent were slightly higher than last year, being 695.6 kilos for flue-cured and 1,129.9 kilos for air-cured, with an average for all leaf of 754.1 kilos per arpent. The individual yields obtained by growers per arpent varied from 205 to 2,336 kilos for flue-cured Amarello, from 116 to 785 kilos for flue-cured Virginian, and from 149 to 2,309 kilos for air-cured Amarello.

103. The average financial return per arpent was Rs 3,409 in the case of flue-cured and Rs 2,594 for air-cured. Especially in the case of flue-cured these figures are appreciably higher than last year, thanks partly to the increased yield per acre and partly to a higher proportion of the better-priced medium and bright grades. Returns per arpent to individual growers ranged from Rs 960 to Rs 12,258 for flue-cured Amarello, from Rs 466 to Rs 4,329 for flue-cured Virginian, and from Rs 197 to Rs 5,852 for air-cured Amarello. The average value of flue-cured leaf was Rs 4.97 per kilo, as compared with Rs 4.15 last year and that of air-cured was Rs 2.20 as against Rs 2.13 last year.

104. A most satisfactory feature of the crop was the significant improvement in quality. In the case of flue-cured tobacco, the percentage of Bright and Medium grades was 70 compared with 50 in 1954. For air-cured, the percentage of these grades was 15 against 10 last year.

105. The manufacturers purchases and usings of domestic and imported leaf during the calendar year are shown below in kilos:—

|               |     |          |          |          | Value per kilo |          |
|---------------|-----|----------|----------|----------|----------------|----------|
|               |     |          |          |          | Imported       | Domestic |
|               |     |          |          |          | % Total        | c. i. f. |
|               |     |          |          |          |                | Rs. c.   |
|               |     | Domestic | Imported | Total    |                |          |
| Purchases ... | ... | 412,691  | 156,538  | 569,229  | 27.5           | 9 72     |
| Using ...     | ... | 420,814  | 148,873½ | 569,687½ | 26.2           | 4 91     |

The purchases of imported leaf have increased greatly over recent years having been as low as 4.4 per cent of total leaf as recently as 1944. This year's figure of 27.5 per cent imported on total leaf bought represents an increase of 6 per cent over 1954 and 8.8 per cent over 1953. For the first time in recent years, however, the percentage of imported leaf used in manufacture has shown a slight decrease, being 26.2 per cent as against 27.2 per cent last year.

106. Imports of unmanufactured leaf noted above were of a total c.i.f. value of Rs 1,521,917, the greater part of this being of American origin. Manufactured cigarettes were also imported into the Colony in increasing amount, the figures for 1955 being 77,355 kilos of a c.i.f. value of Rs1,372,407. Leaving out of consideration the small imports of cigars, cheroots and pipe-tobacco, the figures for the last two years in regard to imports may be tabulated thus:—

|                |     | 1954    |                       | 1955    |                       |
|----------------|-----|---------|-----------------------|---------|-----------------------|
|                |     | Kilos   | c. i. f. Value<br>Rs. | Kilos   | c. i. f. Value<br>Rs. |
| Leaf ...       | ... | 114,678 | 1,060,204             | 156,538 | 1,521,917             |
| Cigarettes ... | ... | 52,305  | 944,214               | 77,355  | 1,372,407             |
| TOTAL ...      | ... | 166,983 | 2,004,418             | 233,893 | 2,894,324             |

107. The Tobacco Board has, during the year, paid considerable attention to possibilities of expanding local production through increased local sales or by export.

108. The local market obviously offers scope for increased sales of domestic leaf. It is interesting that, whereas the total value of the domestic crop this year was Rs 1,020,543, that of imported leaf and cigarettes for the same period was Rs 2,894,324. In terms of weight, the amount of domestic leaf sold during the year was about 413,000 kilos compared with nearly 234,000 kilos imported in the form of either leaf or cigarettes.

There is no doubt that, by production of acceptable types and grades, the local industry should be able to replace part at least of present tobacco imports. The problem is, however, a complex one in that the manufacturer has to cater to consumer taste and introduce a considerable amount of imported leaf into his top brands in order to meet competition from imported cigarettes. In any event, a proportion of imported tobacco will probably always be required for blending purposes, especially in regard to the better quality local cigarettes. At present, the policy of the Tobacco Board is to encourage the production of the better grades of Virginian "New Varieties" with the object of enabling the manufacturer to reduce his importations of Rhodesian and American leaf. To this end, the Board has raised the purchase price of bright and medium grades for 1956 with corresponding reductions in the price of dark grades. At the same time, the manufacturer has co-operated by arranging for a visit, at the manufacturer's expense, of a leaf-expert to advise during the next crop on ways and means of improving the general quality of local leaf. The Tobacco Research Station is also devoting attention to the production of local strains of Virginian varieties with enhanced yield and disease-resistance. While encouraging the increased production of better quality Virginian, the Tobacco Board also hopes to maintain the present scale of production of Amarello. The latter is suited to a section of local consumer taste and extremely popular with planters on account of its high yield, comparative freedom from disease, and relatively simple cultivation and curing requirements.

109. The export market was carefully examined during the year with the most discouraging results. So far as the United Kingdom market is concerned, it is apparent that there has been a radical change from the immediate post-war years when some demand for Mauritius leaf existed. Then leaf was in

generally short supply, there were a number of small independent purchasing companies interested in comparatively small consignments, American imports were severely restricted, and the Rhodesian industry had not expanded to its present size. Now all leaf imports are in the hands of a few large combines who are allowed to obtain up to 60 per cent of their requirements from the United States and who can purchase all they require of Rhodesian leaf at prices considerably lower than the Mauritius equivalents. Such organizations buy only in quantity and would not be interested in the amounts that could be offered by Mauritius, even if the price were competitive. Under the circumstances, it must be accepted as fair comment that one of the three leaf-merchants to whom samples were submitted through the Colonial Products Laboratory has reported that, although quality was satisfactory, there are "absolutely no commercial prospects of marketing these tobaccos outside the territory in which they are grown". The foregoing applies to Virginian, as there is no interest in Amarello in the United Kingdom except for possible re-export to the Continent. Enquiries as to Amarello for the Continental market revealed that Mauritius prices did not allow any chances of effecting sales in the presence of abundant supplies of low-priced Brazilian leaf. Similarly, a number of enquiries to the Far East showed that there was no interest in purchases from Mauritius owing to the availability of cheap leaf from Asiatic sources.

110. In short, an increase of tobacco cultivation in Mauritius at present appears possible only to the limited extent afforded by the possibility of replacing a part of current imports through increased production of Virginian tobacco of satisfactory quality.

111. The only exports during the year consisted of one small consignment of 5,879 kilos of air-cured Amarello to the United Kingdom and it appears unlikely that further orders will be received. Apart from this and a small amount of 318 kilos sold to the Medical Department for the inmates of the Mental Hospital, all sales were to the local manufacturer.

112. The Tobacco Board's new warehouse at Plaine Lauzun was formally opened by the Governor on the 15th June and operated for the first time with the 1955 crop. The acquisition of properly designed premises has greatly facilitated the Board's work in purchasing, grading, conditioning, baling, storing and selling the island's tobacco crop.

113. At the end of the year the Tobacco Board was unexpectedly and prematurely required to vacate the buildings at Line Barracks in use as a bonded warehouse, since these were required by Government as accommodation for certain offices that had been destroyed by fire. The result was that stocks had to be transferred to Plaine Lauzun and the tobacco on hand there became greatly in excess of the storage capacity of the New Warehouse. As the manufacturer's storage is limited and his usings will be insufficient to reduce congestion so as to allow working space for the 1956 crop, it is almost certain that the Board will have to incur further expenditure in the immediate future for extending its warehouse space.



114. During the year, the Tobacco Board revised the salaries of its staff, increased its contribution to the Staff Provident Fund and initiated certain welfare measures for the benefit of its employees.

115. A visit was received in October of senior officials from the London office of the British-American Tobacco Co. Ltd.

116. The Tobacco Research Station continued its work at Richelieu and Pamplémousses on varietal improvement, seed-bed and cultivation practice, production of seed for planters, and curing techniques. As already indicated, the main hopes for expansion of the tobacco industry lie with increased production of good quality Virginian. The present Virginian varieties, however, compare most unfavourably with Amarello as regards yield, resistance to disease and ease of cure. The main effort of the Tobacco Research Station is, therefore, being directed towards creation of improved Virginian varieties through selection and hybridisation, the introduction and testing of new varieties, and the improvement of curing techniques.

117. Some forty flue-cured Virginian varieties, including recent introductions, have been under observation or selection. While nearly all are capable of satisfactory yield and quality, they exhibit market variation in resistance to Mildew and spot diseases and, unfortunately, most are highly susceptible to Black Shank, the most serious disease of tobacco in Mauritius. It may be noted, however, that Harrison Special, introduced two years ago from the Gold Coast, has shown marked resistance to Black Shank and offers considerable promise if its susceptibility to Mildew can be overcome by earlier planting.

118. Selection has continued on the hybrids produced between RG, a cigar wrapper variety from Florida, and flue-cured Virginian varieties. All selections have retained the Black Shank resistance of the RG parent and many are now approaching the Virginian type in quality.

119. Self-pollinated and mass-selected seed of the Virginian varieties Bonanza, Jamaica Wrapper and Yellow Mammoth was produced on the stations for supply to planters. The Yellow Mammoth is of a strain showing high resistance to Black Shank and is becoming increasingly popular with tobacco-growers. The Department also produced growers' requirements of selected Amarello seed.

120. Excellent protection of seed-beds, with resultant economy in seed, has been obtained through use of some of the more recent insecticides. This work will be extended next year and demonstrated to planters.

121. Two flue-curing barns of a new design have been erected at Pamplémousses and will be operated next season. These are constructed of cheaper material than is normally used and are also expected to be more economical in fuel-consumption due to a system for the re-circulation of heated air rising in the barn.

122. Preliminary experiments on the use of steam in curing have given appreciable improvement in leaf-colour and it is hoped to instal a steam-curing unit at Richelieu next year.

### Food Crops

123. The progressive reduction in the amount of food crops grown which has been evident since the end of the war has again continued. The trend is shown by the figures below:—

#### FOOD PRODUCTION BOARD REPORTS (YEAR JULY-JUNE)

| <i>Year</i>    | <i>Arpents</i> | <i>Metric<br/>tons</i> |
|----------------|----------------|------------------------|
| 1948-49 ... .. | 18,018         | 19,673                 |
| 1949-50 ... .. | 13,707         | 15,558                 |
| 1950-51 ... .. | 9,208          | 14,469                 |
| 1951-52 ... .. | 9,325          | 15,075                 |
| 1952-53 ... .. | 8,691          | 17,371                 |
| 1953-54 ... .. | 7,700          | 13,588                 |

#### DEPARTMENT OF AGRICULTURE REPORTS (CALENDAR YEAR)

| <i>Year</i> | <i>Arpents</i> | <i>Metric<br/>tons</i> |
|-------------|----------------|------------------------|
| 1954 ... .. | 8,191          | 17,376                 |
| 1955 ... .. | 5,584          | 9,395                  |

The acreage shown above is effective acreage and includes aggregate acreage of two or three crops grown on the same land in one year as well as areas of food-crops interplanted in sugar-cane. The actual area of food-crops is very much less. Reduction in food crop production is mainly the result of the tendency to plant all available land to sugar. With the easy supply of imported foodstuffs such as rice, there has also been less inclination to make maximum use of the possibilities of growing food-crops between the lines of young plant-cane.

124. The potato crop was poor due partly to inadequate supplies of imported seed and partly to unfavourable weather conditions resulting in high incidence of Blight. Potatoes are normally a profitable crop, but unfortunately expansion is limited by difficulty in obtaining sufficient good seed in time for the planting season.

125. Intensive market-gardening continues to develop satisfactorily around the urban areas. The Department produced from the Barkly Station over 2,300 kilos of improved vegetable seed for sale to growers as compared with a little under 2,000 kilos last year. It is intended to further increase both production and the range of varieties offered.

126. Investigation and improvement of food-crops in the Experimental Stations are being confined mainly to vegetables, pulses, maize and potatoes, since it is considered that under present economic conditions there is little likelihood of land being available for crops of less importance from either the nutritional or price aspects.

### Livestock

127. The Animal Husbandry Extension Service continued to provide island-wide Artificial Insemination for milk-cattle. During the year, exclusive of re-inseminations, 7,640 inseminations were carried out as well as over 1,000 pregnancy assessments. Calls for simple veterinary treatment attended to numbered 10,538. As previously, a large proportion of the cases treated were for enucleation of ovarian cysts or calcium deficiency.

128. The Artificial Insemination Centres at Curepipe and Pamplemousses were closed down during the year and all sires centralized at Reduit. Apart from economy, this change will be of benefit in removing the disadvantage attendant upon district centres of restricting a limited number of bulls to one particular locality.

129. During the latter part of the year an additional Livestock Officer was recruited specifically for future extension work in poultry husbandry. This officer is being given preliminary training in the Department and will be sent to the United Kingdom next year for further training.

130. The Veterinary Service maintained the routine duties of control and inspection of livestock imports, supervision of the animal quarantine station and quarantine kennels, control of the slaughter of animals of the milk breed, inspection of abattoirs, instruction of Sanitary Inspectors in meat inspection, lecturing at the College of Agriculture, veterinary assistance to livestock-owners and the control of animal diseases. In the latter connection, it may be noted that Newcastle Disease of poultry, which spread throughout the Colony last year, has now been brought under control by means of an oral vaccine prepared locally by the Bacteriological Laboratory of the Health Department. Incidence of tuberculosis in herd cattle is still relatively high, but good progress has been made in control through repeated tuberculin-testing with elimination of reactors. Unfortunately, control measures in regard to this and other diseases may have to be relaxed temporarily consequent on the resignation of the Veterinary Officer which was effective as from the end of the year.

131. Although the sale of animal feeding-stuffs manufactured by the Engineering Division at Richelieu has shown an appreciable increase over last year, small cow-keepers in particular have evinced very little inclination to feed concentrates even though fodder shortages continue and are likely to be progressively intensified in the sugar areas where most of the milk cattle are located. Bearing in mind the necessity of popularizing the use of concentrates if milk production is to be increased under local conditions, the Department has endeavoured to put its feeds on the market at the lowest possible price. In this connection, ureated molasses, which is retailed at the very low price of Rs 100 per ton, offers considerable promise as a cheap protein-substitute and feeding trials at the Government Dairy have shown that up to half the normal concentrate ration can be replaced by ureated molasses with considerable resultant economy. The Department is shortly to open an extension shop in Rose Hill for sale of feeding stuffs and it is hoped to eventually provide island-wide facilities for sale of animal feeds when the various District Centres of the Agricultural and Animal Husbandry Extension Services are established under the Capital Expenditure Programme 1955-1960.

132. Work at the Palmar Breeding Centre continues to be concentrated mainly on the improvement and standardization, by selection, of the herd of Creole milk cattle. Some progress has been made, but it is evident that extensive culling is still required and that the herd is numerically inadequate. Funds are available under the Capital Expenditure Programme for enlargement of the herd by purchase and for improving the buildings and pasture facilities.



Besides the Creole herd, small numbers of Ongole cattle, Dorsian sheep and Anglo-Nubian goats are maintained at Palmar for the purpose of providing breeding animals for sale to rearers who wish to up-grade their livestock.

133. The Government Dairy at Curepipe has had a satisfactory year as regards milk-production. The future of this herd is, however, under consideration. The animals are now an extremely heterogeneous collection of Fresian x Creole crosses of all degrees and, as such, are of no value to the Department in its main effort of breeding standard improved bulls for the up-grading of the general cattle population through the Artificial Insemination Service. Moreover, the Dairy herd has for years harboured a persistent Contagious Abortion infection, which, although kept under control by the use of S. 19 Vaccine, constitutes a potential threat to the remainder of the island's cattle. The complete renovation of the obsolete dairy buildings and fittings, scheduled for completion next year, offers an obvious opportunity to dispose of the herd, eradicate the Contagious Abortion infection by a resting-period, and re-stock with animals which will be more useful in the general breeding programme of the Department.

134. The cattle-breeding policy of the Department is under review. Now that the third generation has been reached since the use of part Friesian bulls in the Artificial Insemination Service, recessives are starting to show up and it is considered that the Creole cattle population may lose the characters which adapt it so excellently to the prevailing climatic, management and feed conditions unless further uncontrolled crossing is stopped and the existing type standardized at its present level of exotic blood. With this in mind, it may be desirable to re-stock the Dairy with Creoles, thus enabling a speed-up in the work of selective improvement and stabilization of the breed. Once this is accomplished, the Dairy could be used at a later stage for testing a further temperate-climate breed, such as the Jersey, as to suitability for the cooler uplands and, if found necessary, for controlled cross-breeding with the improved Creole.

135. As in the case of the Veterinary Branch of the Livestock Division, the future work of the Animal Husbandry Branch may be handicapped by shortage of professional staff. The Animal Husbandry Officer went on leave in November prior to termination of his secondment from the Basutoland Government and a successor has not yet been recruited.

136. Reference is made elsewhere to grassland work; but it may be recorded here that initial results have shown that *Setaria* and Elephant Grass are well suited to the uplands and Molasses Grass to coastal areas, while dried acacia meal offers considerable promise as a feeding stuff in view of its high protein content, provided the problem of its economic production can be solved. The newly recruited officer for grassland and fodder work began his duties on his arrival in May.

### Land Settlement

137. The Pilot Land Settlement Scheme, which comprises the Terre Rouge, Richelieu and Petit Sable settlements, is virtually complete except for the provision of irrigation water at Terre Rouge and certain improvements in the distributory system at Richelieu.

138. Expenditure on this Scheme, from inception in 1950 to the end of the calendar year 1955, has been Rs 802,720. The present position in regard to utilization is tabulated below:—

|                  | <i>Arpents</i> |               | <i>No. of Holdings</i> |             |                    | <i>No. of Tenants</i> |
|------------------|----------------|---------------|------------------------|-------------|--------------------|-----------------------|
|                  | <i>Total</i>   | <i>Leased</i> | <i>Equipped</i>        | <i>Bare</i> | <i>Orion-Plots</i> |                       |
| Terre Rouge ...  | 266            | 262           | 20                     | 83          | —                  | 102                   |
| Richelieu ...    | 112            | 58            | 10                     | 10          | —                  | 19                    |
| Petit Sable ...  | 259            | 91            | 10                     | 50          | 106                | 82                    |
| <b>TOTAL ...</b> | <b>637</b>     | <b>411</b>    | <b>40</b>              | <b>143</b>  | <b>106</b>         | <b>203</b>            |

139. The unutilized portion of Richelieu consists of non-irrigable black stony soils and that of Petit Sable of steep mountain slopes.

140. Soil conservation works were carried out at Petit Sable and about 7 arpents of the hitherto unused steeper lands were prepared for cultivation and will be leased with the object of ascertaining whether a greater proportion of the area can safely be made available for occupation by tenants. As in the previous year, tenants obtained satisfactory crop-returns.

141. Full use of the Terre Rouge Settlement continues to be delayed by lack of irrigation water. The main irrigation channel has, however, been completed as well as the survey in connection with the siting of the distributory system and reservoirs. It is expected that these latter will be constructed next year and that irrigation water will be available to all holdings by the end of 1956. In the mean time crops have been affected by lack of water and the majority of tenants have not yet taken up residence on their holdings.

142. The Richelieu Settlement is now fully developed except for minor improvements to the irrigation system scheduled for next year. Crops have been satisfactory; but few of the tenants are resident, most preferring to live in the neighbouring townships.

143. Further capital expenditure on the Pilot Scheme, which is expected to be complete by 1957, is estimated at Rs 278,000, most of which will be for provision of the long-delayed irrigation works at Terre Rouge.

144. The Palmar Dairy Small-Holding Scheme is complete except for the issue of loans to tenants for the purchase of cows. It is hoped to proceed with this next year as soon as adequate safeguards have been devised. Consideration is also being given to release of additional sandy land for cultivation of vegetables. Capital expenditure from inception in 1953 to the end of 1955 has been about Rs 79,000. The present position is shown below:—

| <i>Arpents</i> | <i>Arpents Leased</i> |               | <i>No. of Holdings</i> |             | <i>No. of Tenants</i> |
|----------------|-----------------------|---------------|------------------------|-------------|-----------------------|
|                | <i>Cultivation</i>    | <i>Fodder</i> | <i>Equipped</i>        | <i>Bare</i> |                       |
| 172            | 65                    | 80            | 10                     | 13          | 23                    |

145. The houses on the equipped holdings of both the Pilot Land Settlement Scheme and the Dairy Small-Holding Scheme have been the source of much dissatisfaction on the part of tenants. The whole matter has been studied by the Land Settlement Committee of the Board of Agriculture, Fisheries and Natural Resources and the recommendations of this Committee will be considered by the Government in due course.

146. The Department has continued to administer the Relief Allotment Scheme which was established in 1932 as a measure to relieve destitution consequent on cyclone damage and depression in the sugar industry. This Scheme embraces some 230 arpents in seven localities and includes 196 lots with 136 dwellings.

147. Recommendations have been submitted to the Government concerning standardisation of conditions in regard to the existing land settlements and relief allotments and their incorporation into, and extension as, a new allotments scheme.

### Plant Pests and Diseases

148. The position in regard to pests and diseases of sugarcane remains very much as previously reported. Chlorotic Streak and Ratoon Stunting Disease continue to be the main diseases and to be more evident in the wetter districts. The former is under effective control through hot-water treatment of setts prior to planting and the Sugar Research Institute is investigating the conditions necessary for similar control of the latter. The presence in Madagascar of Fiji Disease, the most serious disease of sugarcane known, constitutes a grave menace. Everything possible is being done to guard against accidental introduction and, in the mean time, Mauritius cane-varieties are being tested for resistance in Madagascar while a study has been carried out of the insect-vector with a view to early institution of measures to reduce or eliminate it in Mauritius. Investigation continued of methods of control of the major insect pests of sugarcane, the White Grub and the various Moth-Borers. On the experimental scale, excellent results have been obtained by the use of the insecticide, chlordane, as a soil treatment against White Grub. Attempts to establish biological control of the Moth-Borers have not, however, met with much success, only one of the many parasitic introductions having shown any degree of promise.

149. Owing to climatic conditions, Maize Rust has again caused little damage in Mauritius. Unfortunately the disease has spread to the dependencies of Rodrigues and Agalega, the outbreak in the former being particularly severe. Introduction of the disease into these islands has occurred in spite of the prohibition of imports of maize from Mauritius which was imposed after the appearance of Rust in the latter. These new infections constitute a further advance in the eastward progress of the disease, which originated in South America and has now spread across the African continent from west to east. During the year further introductions of maize selections were made from East and West Africa with the object of breeding resistant varieties or hybrids. It is likely to be some years before this work yields economic results.

150. Cultivation of the Pigeon Pea, a food crop which might be of great nutritional importance to the Colony, is severely limited by the incidence of two insect pests, *Etiella* and *Maruca*. Some control of *Etiella* has already been achieved by a previous parasitic introduction: further introductions of a potential parasite of *Maruca* were made during the year in continuation of the effort to achieve some measure of biological control over this pest.

151. With the inauguration of a Division of Plant Pathology in the Sugar Research Institute at the beginning of the year, the Department has transferred responsibility for research on diseases of sugarcane to the Institute.



### Fisheries

152. The marine fisheries are the subject of a separate Annual Report issued by the Fisheries Division of the Department of Agriculture. Reference may be made to this for statistical information and for details of the conservation work carried out by this Division under control of the Fisheries Officer.

153. The report of the Oyster Culture Committee of the Board of Agriculture, Fisheries and Natural Resources has been kept under review and efforts have been made to obtain the temporary services of a biologist to conduct the further investigations recommended by the Committee. It appears possible that a suitable officer may be available next year.

154. The Fisheries Advisory Committee of the same Board continued its study of present conditions and future policy. It is expected that the report and recommendations of this Committee will be submitted to the Government in 1956.

155. Preliminary investigation of pond-culture of fresh water fish was commenced by the Agricultural Division in July. In August three of the four new ponds constructed at Five-Ways were stocked with some 700 *Tilapia melanopleura* transferred from the Forest Department dam at Belle Rive where the original introduction of 29 specimens from Tanganyika was made in March, 1954. In September fry of *T. nilotica* and *T. macrochir* were received from Tanganyika and placed at the Curepipe Experimental Station where four small ponds have been made: by the end of the year these fish had made excellent growth. Next year it is intended to stock the irrigation reservoirs at the Richelieu Experimental Station in order to obtain comparative results in the hotter lowland zone. As supplies of fry are still insufficient to allow stocking of ponds at the optimum rate, no figures for yields of fish per acre of pond under Mauritius conditions are yet available; but preliminary indications are that *Tilapia* will breed and grow satisfactorily in the Colony and offer some prospects for small scale production of fish from reservoirs, artificial ponds and natural bodies of fresh water.

### Rodrigues

156. The salient features of the year have been the posting of an officer with full professional qualifications to take charge of the Department in Rodrigues and the subsequent drafting of a development plan to deal with the critical position that has arisen due to a rapidly increasing population dependent on limited agricultural land which has been fast deteriorating under poor farming methods. This plan, which calls for the installation of soil and water conservation works throughout the uplands and the reformation of the entire arable area into unit farms under rotational cropping with incorporation of livestock and a grass fallow, has been submitted to the Government.

157. The Liaison Officer and the Director of Agriculture accompanied the newly appointed Senior Agricultural Officer to Rodrigues in August. This officer reported back in Mauritius at the end of the year for discussions in regard to the draft plan for the agricultural development of Rodrigues.

158. A pinnacle of the Fisheries Division was sent to Rodrigues at the end of the year for investigation of the possibilities of developing off-shore fisheries outside the lagoon.

### Lesser Dependencies

159. Distance and communication difficulties have precluded any organized attempt by the Department to improve agricultural conditions in these islands.

160. It may be recorded, however, that Maize Rust was identified in Agalega for the first time but, so far as has been ascertained, the disease has not yet reached the Chagos Group.

161. At the request of Agalega Ltd. the Assistant Entomologist paid an advisory visit to Agalega to investigate the possibilities of commercial cotton production as affected by the presence of pests and diseases. The company was advised to eradicate the existing perennial cotton of the " Bourbon " type (*G. hirsutum* race *punctatum*), which is of low value and uncertain market, preparatory to replacement by a commercial annual type. It is not yet known whether this project will be developed.

162. Production of copra in Agalega and Diego was roughly of the same order as in the previous year and, as formerly, this was shipped to Mauritius for manufacture of edible oil and soap.

### Boards and Committees

163. The Director of Agriculture has been a member of:—

Board of Agriculture, Fisheries and Natural Resources.

Executive Committee of the Board of Agriculture Fisheries and Natural Resources.

Cane Release Committee of the Board of Agriculture Fisheries and Natural Resources.

Agricultural College Advisory Board.

Board of Examiners of the College of Agriculture.

Board of Examiners for the Registration of Agricultural Chemists.

Comité de Collaboration Agricole Maurice-Reunion-Madagascar.

Customs Tariff Advisory Board.

Cyclone and Drought Insurance Board.

Land Acquisition Board.

Malaria Advisory Board.

Mauritius Sugar Industry Research Institute Board.

Research Advisory Committee of the Mauritius Sugar Industry Research Institute.

Sugar Industry Reserve Fund Committee.

Tea Committee.

Tobacco Board.

164. Other officers have represented the Department on:—

Fisheries Advisory Committee of the Board of Agriculture Fisheries and Natural Resources.

Irrigation Committee of the Board of Agriculture Fisheries and Natural Resources.

Land Settlement Committee of the Board of Agriculture Fisheries and Natural Resources.

Sack Factory Board.

Sugar Industry Rehabilitation Fund Committee.

Sugar Millers Rehabilitation Fund Committee.

Sugar Planters Rehabilitation Fund Committee.

Population Committee.

### General

It is gratifying to record the appointment in the Birthday Honours of Mr G. Orian as a Member of the Most Excellent Order of the British Empire. Mr. Orian retired from the post of Plant Pathologist during the year after thirty years' service in the Department.

166. Visits were received during the year from delegations from Reunion and Madagascar to the annual conference of the Comité de Collaboration Agricole Maurice-Réunion-Madagascar, headed respectively by the *Directeur p.i. des Services Agricoles* of Réunion and the *Inspecteur-Général de l'Agriculture* of Madagascar: from Mr E.P. Keely, C.B.E. of the Ministry of Agriculture and Food in the United Kingdom, from Sir Philippe Raffray, C.B.E., the London representative of the Mauritius Chamber of Agriculture, from Mr. L. Marchal, a sugar expert of the French Ministry of Economics, from Mr. George-Levi, Agronomist of the Madagascar Department of Agriculture, from Dr. Ride, C.B.E., Vice-Chancellor of the University of Hong Kong, from Dr. Harlow, the Secretary of State's Assistant Educational Adviser (Technical Education) and from the East African representative of Messrs. Pest Control Ltd. The members of the Public Service Commission also visited the Department. The Governor inspected the Head Office of the Department as well as several of the stations.

167. The Plant Pathologist of the Department visited the Fiji Disease-affected areas of Madagascar on behalf of the Sugar Research Institute and reported on the current position. Arrangements were concluded for the Entomologist to attend the Ninth Congress of the International Society of Sugar Cane Technologists in India at the beginning of 1956. The senior Deputy Director formed part of the Colonial Territories Delegation at the Fourth Review Conference of the Commonwealth Bureau Organisation held in London in June, and attended the Fourteenth International Horticultural Congress held at The Hague in August.

168. A Departmental Whitley Council was established in November and appears likely to contribute materially to the efficiency of the Department.

169. Head Office accommodation is still inadequate, but it is hoped that early provision of alternative premises for the Sugar Research Institute and the Central Board will soon release space required for veterinary and chemical laboratories and for the headquarters of the Agricultural Extension Service. The position has become more acute since December due to the enforced vacation of the Extension Office in Artillery Square, Port Louis which was required for another Government Department.

170. It may be mentioned that, during the year, regular monthly talks on agricultural topics have been given by the Agricultural Extension Service through the Mauritius Broadcasting Service.

M. N. LUCIE-SMITH,  
*Director of Agriculture.*

27th February, 1956.



### Staff Movement

Mr. G. A. North Coombes, Deputy Director of Agriculture, proceeded on overseas leave on the 30th March and returned on the 27th December, 1955.

Mr. J. G. S. Bennie left the Colony on leave, prior to termination of secondment as Animal Husbandry Officer, on the 14th November, 1955.

Mr. R. Bouvet, Veterinary Officer, resigned from his post on the 31st December, 1955.

Mr. J. Dupont de Rivaltz de St. Antoine, Lecturer in Sugar Technology, College of Agriculture, resigned at the end of the year to join the Mauritius Sugar Industry Research Institute.

Mr. R. Lincoln, Chemist, retired on pension at the end of the year.

Mr. R. B. J. Deane arrived in the Colony and assumed duty as Tea Officer on the 2nd February, 1955.

Mr. R. Antoine, Senior Agricultural Officer i/c Agricultural Division, relinquished his appointment at the end of March 1955.

Mr. L. Johnson (Economic Botanist Trinidad) was transferred to the post of Senior Agricultural Officer in charge of the Agricultural Division. He arrived in the Colony on the 28th March, 1955.

Mr. R. C. Anslow, Senior Agricultural Officer, arrived in the Colony and assumed duty on the 13th May, 1955.

Mr. P. L. Hotchin (Agricultural Officer Gold Coast) was transferred to the post of Senior Agricultural Officer, Rodrigues. He proceeded to Rodrigues on the 22nd August to assume the duties of his post.

### Central Board Division

COMPOSITION OF THE CENTRAL BOARD FOR THE YEAR 1955

Mr. D. E. Hugues, District Magistrate (*Chairman*)

*Millers' Representatives:—*

Mr. E. Julienne.

Mr. A. Harel.

*Big Planters' Representatives:—*

Mr. G. Rey.

The Hon. A. M. Osman, O.B.E.

*Small Planters' Representatives:—*

Mr. M. Burrenchobay, M.B.E.

Mr. R. Deelchand.

The following panel of names was also approved by His Excellency the Governor of substitute members for appointment when necessary:—

*Millers' Representatives:—*

Mr. F. North Coombes.

Mr. M. Rey.

Mr. G. Park.

*Big Planters' Representatives:—*

Mr. Ernest Fayd'herbe.  
 Mr. Lilcant Madhoo.  
 Mr. Jacques Lagesse.  
 Mr. Roland Ducler des Rauches.

*Small Planters' Representatives:—*

Mr. T. M. Seegobin.  
 Mr. M. Ramdin.

Following consideration by the Central Board of a Memorandum of the Chamber of Agriculture which recommended the employment of more chemists by the Board, provision was made in the 1955-56 Estimates for the employment of two more Senior Test Chemists. Messrs P. Ménagé and I. Aumeerally were appointed.

**Meetings**

The Board held 34 meetings during the year, as follows:—

- 2 meetings relative to assessment of sugar to planters
- 1 meeting relative to Memorandum of the Mauritius Chamber of Agriculture
- 1 meeting relative to congestion of factory yards by lorries
- 15 meetings relative to protest against assessment of sugar
- 8 meetings relative to changes of factory areas
- 7 meetings relative to general business

**Assessment of Sugar**

Following publication of assessment figures for the 1954 crop, 30 co-operative credit societies, 19 planters, the Mauritius Planters' Association and the Mauritius Co-operative Agricultural Federation Ltd. lodged protests against the assessment figures.

No protest was received from millers.

Eight Co-operative Credit Societies and six planters withdrew their protests.

The other cases were heard by the Board and rejected except one where one additional kilog of sugar was allowed per ton cane.

**Permits to Middlemen**

62 permits were delivered to middlemen during the year as compared with 54 in 1954.

The tonnage of planters' canes purchased by middlemen varied from 400 tons to 24,000 tons.

The number of middlemen is increasing year by year.

**Breach of Sale of Canes Ordinance**

Many cases of breach of the Sale of Canes (Control) Ordinance, 1941 have been reported to the Police. Prosecutions were instituted where necessary.

Some planters entered into contracts with more than one middleman in breach of the terms of their original contract. On different occasions planters knowingly sold their canes to a factory other than the one in whose area their lands were not included. Many planters fail every year to enter into contracts

with sugar factories before the 30th June in spite of notices published to that effect in the newspapers. Their grounds for not entering into contracts are always illness or forgetfulness.

### **Delimitation of Factory Areas**

Thirteen applications for changes of factory areas were received. In four cases the requests were granted.

### **Control of Cane Weighbridges**

162 weighbridges weighing planters canes were tested during the year. On first inspection 148 were found accurate and 14 had to be re-examined. Of these 14 weighbridges, 9 were found accurate on second examination, 4 on third examination and 1 on fourth examination. None were condemned.

Seven old weighbridges were replaced by new ones prior to the 1955 crop. Four weighbridges were closed down with the Board's approval.

### **Control of Cane Weighbridges during Crop Time**

During the 1955 crop 11 weighbridges were re-examined seven of them at the Board's request and four at the millers' request. All of the former were found correct; of the latter, two were found to be inaccurate and had to be adjusted.

### **Cane Testing**

10,982 tests were carried out on 208 individual or group of planters supplying canes to twenty-four factories. Last year the number of tests was 8,764 and the number of planters or group of planters whose canes were tested 196. In addition to the permanent staff of the Central Board, twenty-one Cane Testers were employed. Of these, five were qualified chemists and the others were either partly qualified or had previous training in sugar analysis. Nineteen of the temporary test chemists worked in the Sugar Factories where they carried out sucrose content tests and in two cases fibre determinations as well.

For the factories which do not possess the necessary equipment for fibre determinations, cane samples were sent to the Central Board where they were analysed for fibre.

### **Registration of Cane Contracts**

9,710 cane contracts were registered. The total number of contracts in force for the 1955 crop was 15,031 of which 14,335 referring to 21,071 planters were on a provisional basis. The total number of planters was 21,767.

### **Costs of Production**

#### **FACTORIES COSTS**

As forecasts in the 1954 Report, early in 1955 the Board was presented with average costs for the 1953 crop with 1952 crop equivalents alongside for comparison purposes.

Work on the figures for the 1954 crop is in progress and average costs for that crop year, together with equivalent figures for the two previous years, and where appropriate average unit costs for three years, will be placed before the Board before the Accountant proceeds on leave in February 1956.



### **Cultivation Costs of Planters and of Estates with Factories**

The 1953 crop figures were presented to the Board together with 1952 crop comparisons early in 1955.

Work on the 1954 crop figures was well forward by the end of 1955 and comparative costs statements will be placed before the Board early in 1956.

### **Protests against the Board's Assessment of Sugar brought on Financial Grounds**

There were no protests on financial grounds in respect of the 1954 crop assessment.

The protest case of Solitude S.E. against the 1952 assessment, was heard in appeal and a final decision was reached on the 21st June, 1955, the provisional assessment of the Board being maintained. No planter protest case was lodged on financial grounds.

S. STAUB,  
*Registrar, Central Board.*

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## **Agricultural Division**

### **Introduction**

The year under review has seen a great number of changes in the Agricultural Division, not only in staff but in organisation and number of interests. It is therefore considered that a brief survey of the field in which the Division is working would help to clarify the objectives it is hoped to attain.

With the transfer of the Sugar Research Station to the Mauritius Sugar Industry Research Institute, the handling of livestock by the Livestock Division, and the care of tea being vested in the Tea Division, the main agricultural activities of the Colony do not appear at first sight to be the province of the Agricultural Division. Understandably, therefore, the question is often asked as to what is the precise function of this division. The following paragraphs are an attempt to analyse the function of the Agricultural Division in relation to the economy of the island, and the lines of activity which can be most profitably explored.

Amongst the most important functions of the Division is the Extension Service recently reorganised under the Senior Agricultural Officer (Extension). This includes advisory services on all crops except tea, large scale sugar cane plantation and animal husbandry. It is therefore a co-ordinating centre for most agricultural activities and is a mouthpiece for all improvements no matter in what division the ideas or methods originate. Lack of basis data on many subsidiary crops is here rather a retarding factor. In such matters this Service will have to rely on the output of information from the Experimental Stations. This will undoubtedly increase the effectiveness of the Extension Services which at present are forced to rely on traditional practices and intelligent guesswork for a large number of crops.

Of those crops dealt with by the Division, tobacco, fibre and vegetables are of greatest economic importance. At present the main work in tobacco should be the improvement in quality and the increased efficiency of production. The volume of production for the present being limited by local consumption, it is necessary to restrain production to this level. In spite of this the quota is regularly exceeded. Imported tobacco forms a large percentage of local consumption, so that it must be towards quality and the reduction of imports that experimental work must be directed unless export outlets for Mauritian tobacco can be found. There is much room for improvement at the lower end of the scale of production, but improvement of the better grades of leaf will be a rather slow process.

The Fibre Industry being in a state of uncertainty as is inevitable with a marginal industry of this type, a planned programme of experimentation is extremely difficult to formulate. It may be noticed in passing that the results of experimental work on this crop have been very disappointing, the main drawback being the poor growth of plants under cultivated conditions. Much more work on the ecology of the crop would provide a firmer basis for future investigations. It is doubtful whether the botanical selection of high yielding, late-poling varieties would achieve much success locally owing to the vegetative method of propagation employed by the plant, all plants having originated, as far as is known, from a single introduction.

New fibres, especially *Urena lobata*, might inject new blood into the industry. This crop appears to have a good chance of success if land on which it can be grown could be provided. Retting is simple and subsequent stripping easy but rather laborious. If fibre ribbons only could be retted, then there are definite possibilities with this crop.

Vegetable-growing is expanding and there is room for improvement in the efficiency of production, although many growers achieved a high standard. The increased use of balanced fertilizers and better insecticidal and fungicidal treatments are the most pressing needs. Further work required is the extension of the season of most species in order to even out the peak seasons: this would bring about a more stable price structure. The latter could be helped further by more extensive production.

The demand for locally produced seeds is steadily increasing and, it is hoped, contributing materially to the improvement of quality.

It is now necessary to turn to crops which are subsidiary from a financial point of view but which are extremely important in the livelihood of the population.

To start with staples, rice has in the past been grown on a small scale but has now virtually disappeared. It appears that this is due not only to unsuitable soils but also to a lack of knowledge of rice-growing. Without advocating that rice-growing should be encouraged, its importance is such that the facts and possibilities should be known.

Manioc, sweet potatoes, yams and arrowroots form the heavy starches of tropical countries. All these crops grow very satisfactorily in Mauritius but there is little interest in them locally and preference is given in the local diet to rice and potatoes. Little return can be expected from any intensive investigation on these crops.

Pulses are in rather a different category as most of the standard tropical pulses do not appear to thrive in Mauritius owing mainly to the incidence of pests and diseases. This can be partly overcome by the increased use of *Phaseolus vulgaris* varieties which at times of the year succeed quite well at most altitudes.

Potatoes are playing an ever increasing role in the economy of the Colony and yields are such as to encourage further intensive work on this crop. A gross return of Rs. 5,000 per acre in four months is quite easily obtained. The crop lends itself to mechanisation, and it is not difficult to envisage the total potato requirements being grown locally. There is however, one big factor militating against this and that is the seed supply. Seed retails in Mauritius between Rs 700 and Rs 900 per ton and the supply is neither regular nor adequate. The possibility of producing seed locally has been raised several times but this has difficulties which are not easily overcome. In some respect Mauritius is marginal for potato-growing due to the high temperatures prevailing and the presence of the vector of the "leaf roll" virus *Mysus persicae*. Storage of potatoes would mean specially constructed cold rooms, with a total capacity of some 500 tons, as experiments on storage at normal temperatures have been a complete failure.

If arrangements could be made with importers and producers of seed potatoes to ensure better supply and if adequate cold storage facilities could be provided in Mauritius, in order to preserve the seed in good condition over the planting season, then there would be a big improvement in the overall situation. The present inflated retail price of potatoes will carry high overheads on seed. Investigations should therefore proceed without delay on all aspects of this crop.

Maize has suffered the ravages of Maize Rust, (*Puccinia polysora*) and even before the advent of this disease it appears to have been a declining crop. First and foremost it is essential to overcome the rust, and then secondly an attempt should be made to evaluate the potentialities of the crop as a grain and fodder.

Several fruit crops grow admirably in Mauritius but production is limited by local demand, as an export market would appear to be on the most distant of horizons. Litchi (*Nephelium litchi*) is the most successful and prominent of the local fruits. The potential production under orchard conditions and economics of litchi-growing should be considered, although overproduction could easily be achieved owing to the very short season. Of domestic importance is the improvement of propagation.

The only other tree fruit of present importance is the mango, and here again the problems are mainly those of orchard production and propagation. Peach, avocado pear, loquat, should be encouraged as subsidiary "back yard" crops.

Of potential importance is the establishment of a small citrus industry to meet local requirements. Pests and diseases appear to be the main difficulties to be overcome before such an aim can be achieved, but apart from this it would seem that citrus will grow at most altitudes. Work is being directed towards the overcoming "Tristeza" disease and the determination of suitable stock—scion combinations for the various climatic zones.



Other fruits of importance are bananas and pineapples. Banana production is hopelessly inefficient. This crop could succeed very well in Mauritius if a little more attention were paid to the growing thereof, and a new plantation at Reduit has exceeded expectations in the volume of fruit produced. The prevailing high prices reflect the low standards of cultivation of this very satisfactory crop.

Pineapples start at a big disadvantage owing to previous failures but with better methods, production could be vastly increased, again high prices reflect the general lack of interest.

The contribution from the Agricultural Division to the production of animal protein, in which the local diet is so deficient, is in the increased production of better feeding stuffs. This is not considered likely to be difficult to achieve as Mauritius is fairly well supplied with a range of suitable species for all conditions. It is the economic utilisation of these crops which is much more difficult to foresee, and above all who will take advantage of the possibilities, as many estates have become discouraged with milk production. Such crops as are grown for fodder and their cost of production point towards milk rather than beef.

Another potential source of animal protein is in fish production, and here all remarks are confined to the production of fresh water fish. Preliminary indications are promising, but further intensive investigation is necessary before it can be said that fish can be produced economically and will be accepted as an item in the diet. As with livestock the question arises as to who will undertake to implement this work if success is achieved on an experimental basis. In the upland districts there appears to be many places where fish could be raised commercially but yields would have to be high to justify the fairly heavy initial outlay on pond construction. The swampy areas in Midlands would appear to be ideal for such a project.

In Mauritius there exist 54,000 acres of what are termed permanent waste lands. If the Agricultural Division concentrates on these lands with the object of producing crops that can employ even half of these lands, then a very significant contribution will have been made to the economy of the island.

These waste lands can be dealt with under four headings individual areas suffering from at least two of the factors:—

- (a) too wet
- (b) too dry
- (c) too stony
- (d) too windy

All these factors can be dealt with without too much difficulty by either drainage, irrigation, bulldozing or erection of wind-breaks.

### Staff

The Senior Agricultural Officer in charge, Mr. R. Antoine, left to assume duty at the Mauritius Sugar Industry Research Institute and he was replaced at the end of March by Mr. L. Johnson. The post of Senior Agricultural Officer (Grassland) was filled in May by Mr. R. C. Anslow, previously at the Grassland Research Station, Hurley, Berkshire.

The staff of the Division has been depleted by the absence of Mr. P. Regnard on sick leave in the United Kingdom and the prolonged illness of Mr. J. Duhamel.

### Experimental work

Work on all Stations has progressed satisfactorily during the year. On every station except Curepipe Experiment Station development is nearing completion. Facilities for work on all stations are good, the greatest need being the provision of suitable mechanical equipment in order that the rate of working and the volume of work can be largely increased.

It is evident that much can be done mechanically in Mauritius where soils generally once cleared of rocks are suited to this type of cultivation. Especially is this true of fodder and vegetable production.

Buildings are on the whole very satisfactory and well adapted to the needs of the stations. It is hoped that all major works will be completed in 1956-57.

#### (a) *Curepipe Experiment Station*.—Meteorological Data (Appendix I).

This station is situated in a region of high rainfall the total amount recorded in 1955 being 160.3". The daily average of bright sunshine being 6.5 hours. Monthly recordings of sunshine are in the region of 200 hours, fluctuations from month to month are without any definite trends.

Soils on the station are for the most part deep laterites with good structure. The degree of stoniness varies considerably from field to field, with a general trend from West to East in decreasing amount of stones. Drainage is quite free but a considerable amount of contour drainage is essential to deal with storm water.

Development has been concentrated on land utilisation: that is making the best use of available space. The utilisation of three acres of marshy land as fish ponds has added considerably to the attractiveness of the station. About five acres have been put into fodder grasses. Eight acres were cleared by bulldozing and heavy harrowing, this land being intended for tree crops.

Road building and fencing have continued satisfactorily and the road from the station buildings to the Dairy is now open to heavy traffic. Many fields are now fenced with concrete posts and wire netting as a protection against hares and deer.

The greatest needs are at present the bringing of fields into good order, destoning, constructing of contour drains and the establishment of a satisfactory cropping system for the arable fields. The establishment of wind-breaks on this rather windy station is particularly important.

Experimental work has had to be confined, to a large extent, to suitable methods of development of land of this type: concerning which there is little experience locally.

However it has been possible to carry out some work of an exploratory nature for future guidance.

*Grass*.—Fourteen species of grass were planted in a non-replicated trial to give some idea of the response of each to fertilizer.

The following species have shown promise of doing well at Curepipe:—

Elephant Grass

*Panicum maximum*

Bua River *Setaria*

Kazungula *Setaria*

*Panicum Makarikari* (Complete Table at Appendix II).

Other trials were carried out on the effect of N P K dressings on naturally occurring pasture. These have demonstrated the need for the use of adequate fertilizer dressings (Appendix III) especially nitrogen and phosphate.

Extensive areas have been planted to *Setaria* species and elephant grass for further work and to provide fodder for the Government Dairy.

*Root Crops*.—In general the need for adequate dressings of superphosphate and sulphate of ammonia have been demonstrated.

Both *Canna edulis* and arrowroot have responded very well to these fertilizers. Cassava, sweet potatoes and yams have also been grown satisfactorily in this cold wet district.

More extensive work has been carried out on potatoes. Seasonal plantings of King George V variety with liberal fertilizer and farmyard manure have shown (Appendix IV) that there is a production peak for planting in June and July. At this period of the year  $5\frac{1}{2}$  tons per acre have been harvested. Blight can be very severe in this district in spite of spraying at intervals of ten days with copper fungicide.

Planting stored potatoes from 1954 proved very unprofitable as shown by a spacing  $\times$  fertilizer trial in which both imported and stored seed were used (Appendix V). A variety trial (Appendix VI) with seed from 1954 and kept in cold storage showed that several varieties have promised at Curepipe notably: Alpha, Kennebec, Pentland Ace, with the variety King George V coming out rather badly. This trial, however, suffered severely from blight and the results therefore are not reliable.

There appears to be some evidence that "Perenox" is more effective than "Soltosan" in the control of blight.

Storage experiments on seed potato showed that of 1,650 kilos stored at Curepipe in trays in a concrete room, 238 kilos went bad, 478 kilos were lost by reduction in moisture content. Storage in drums with "Fusarex" at the rates of 5 kgs and 25 kgs per ton of potatoes, resulted in the total loss of potatoes.

*Rice*.—A spacing trial was carried out on the variety Makalioka under "dry" conditions. The three spacings tried were 6"  $\times$  6", 9"  $\times$  9" and 12"  $\times$  12". There was no significant difference between the yields of the latter two spacings which were rather better than the 6"  $\times$  6" (Appendix VII).

Lodging was greater in the two closest spacings.

*Oats*.—Seventeen varieties of oats were tried on a small scale. Little success was achieved, the following varieties being the most promising: 97/52, 3/53, 4/53, 10/53, 13/53, 14/53, 20/53



*Wheat*.—Six varieties of wheat were received from the Department of Agriculture, W. Australia: Kondut, Eureka, Bencubbin, Gabo, Woongoondy, Insignia 49. Of these Insignia and Wongoondy were the most promising but far from being satisfactory varieties for Curepipe.

*Vegetables*.—Most of the locally grown vegetables can be grown reasonably well, if planted rather later in the season than is customary.

*Fresh Water Fish*.—Five ponds totalling approximately three acres have been constructed for breeding and experimental work. After some initial difficulties all these ponds can now be drained, fished and filled satisfactorily. A series of small ponds for breeding purposes has also been constructed.

Fry of *Tilapia nilotica* and *T. macrochir* were introduced from East Africa on September 10th. These have grown satisfactorily having reached a length of 6" and 5½" respectively by November.

So far no breeding has taken place. It is desirable that breeding should not take place at too small a size. Detailed experimental work is being held up for lack of numbers.

At Belle Rive and Five-Ways there are now six ponds. The Belle Rive ponds have proved difficult to drain, and consequently difficult to fish. The Five-Ways ponds were stocked from Belle Rive ponds on August 9th. The fish in these had reached a length of 20 cms by the beginning of February, 1956. Growth rates are encouraging and work will be intensified. Eels appear to be a potential danger and steps will have to be taken accordingly.

It is not yet possible to estimate yield per acre as stocking of ponds at satisfactory rates has not been accomplished due to lack of fry.

(b) *Central Experiment Station*.—Meteorological Data (Appendix VIII).

This station is situated at an elevation of 1,030 ft. above sea-level in an area of medium rainfall, the total for 1955 being 66.16". This was spread fairly uniformly over the whole year, with the peak wet period in February-March and the last four months of the year the driest (Appendix IX).

#### MISCELLANEOUS WORKS

The basic requirements of irrigation, fencing and buildings have now been completed. During the year the following works were carried out:—

- (a) Completion of boundary wall with surmounting barbed wire fence,
- (b) Six hundred feet of roads,
- (c) One thousand four hundred feet of irrigation canals,
- (d) A combined store and office,
- (e) A carpenter's shop.

#### CROPS

*Maize*.—A fertilizer × spacing trial planted in February was a complete failure due to cyclonic conditions in the early stages.

Preliminary studies on the production of maize resistant to *Puccinia polysora*—maize rust— have been initiated. Lines imported from the West African Maize Research Unit have proved to be very heterogeneous and several generations of selfing will be required in order to establish uniformity. Some of the types appear to be good yielders producing strong and vigorous plants.

A further importation of rust-resistant material was made from the East African Agriculture and Forestry Research Organisation. These were inbred lines which proved rather difficult to raise. Selfed seed was, however, obtained in all lines but one. The East African maize is only suitable for the production of hybrid seed, and has no possibilities as a source of mass-selected resistant material.

*Potatoes.*—A fertilizer  $\times$  spacing trial was carried out upon which was imposed a comparison of stored  $\times$  imported seed. This trial emphasised the benefits to be obtained from close spacing, high manurial treatment and the use of freshly imported seed. Yields of six tons per acre were obtained from the better plots. Plants from stored seed suffered more acutely from blight.

A trial to compare the effects of deep *v/s* shallow planting showed that there was no significant difference between the two methods (Appendix IX).

A variety trial to compare the differences in yield between nine varieties suffered so badly from blight that the results have little validity: King George V, Alpha, Arran banner, Up to date, Kennebec all showed yields over two tons per acre (Appendix X).

*Bananas.*—New plantings of bananas were made in an attempt to demonstrate the benefits of controlling sucker growth to three shoots of different ages, per-stool.

The varietal collection was moved from Barkly Experiment Station to Reduit.

*Groundnuts.*—A Spacing trial  $\times$  Quantity of planting material used showed that a close spacing of 12"  $\times$  12" was more satisfactory than either 12"  $\times$  15" or 12"  $\times$  18". There was no significant difference between 3, 4, or 5 seeds per hole.

A variety trial with eleven varieties of groundnut confirmed the use of the standard variety "*Cabri*", giving much higher yields than other varieties: the three highest yielders were:—

|           |     |     |     | Kilog<br>per acre |
|-----------|-----|-----|-----|-------------------|
| Cabri     | ... | ... | ... | 2,520             |
| Manyema   | ... | ... | ... | 2,225             |
| Tennessee | ... | ... | ... | 1,980             |

This station suffers from exposure to a fairly high degree and it is essential to establish windbreaks at frequent intervals. Soils also could be improved by the incorporation of a grass break in the rotation.

(c) *Barkly Experiment Station.*—Meteorological Data—(Appendix XI).

This station is situated at an elevation of 600 ft. The distribution of rainfall shows a peak during February and March when over half the total rainfall is received. For the rest of the year irrigation is essential for satisfactory crop growth.

#### MISCELLANEOUS WORKS

1. The old pond was rebuilt and now forms a very attractive addition to the station.

2. A concrete floor was laid in the old shaded nursery. Conditions now are very satisfactory and maintenance has been much simplified.

3. Four and a half acres of land, formerly belonging to the Prisons Department was bulldozed by the Mechanical Pool. It is intended to replan the orchards and establish them in this area. Contour lines have been planted in *Setaria* sp. and acacia as protection against erosion and wind respectively.

#### PLANT INTRODUCTION

*Vegetables*.—Several cauliflower varieties were imported from U.K. Only two varieties produced curds of marketable size: Snow ball, Early White London. Both these varieties failed to produce seeds.

Two tomato varieties were imported from U.K.: Potentate, Harbinger. Potentate shows promise if given great care and attention.

*Citrus*.—The following varieties of citrus budwood were imported in July, from Trinidad: Valencia Orange, Pineapple Orange, Washington navel Orange, Parson Brown Orange, Marsh Grapefruit, Cleopatra Mandarin, West Indian Lime. These were grafted on to local Mandarin stocks at Reduit. Owing to the rather poor condition in which they arrived, only the following succeeded:—

|                       |                       |
|-----------------------|-----------------------|
| 1 Valencia Orange     | 5 Marsh Grapefruit    |
| 1 Pineapple Orange    | 2 Cleopatra Mandarin. |
| 5 Parson Brown Orange |                       |

In order to provide suitable Tristeza-resistant material, importation of the following seed was imported from South Africa:—

|                           |                                                 |
|---------------------------|-------------------------------------------------|
| Tristeza resistant stocks | ... Rough lemon                                 |
| Empress Mandarin          | } Tristeza resistant when grown on<br>own roots |
| Fagan Mandarin            |                                                 |
| Djerock Keprok Mandarin   |                                                 |
| Waterkloof Sweet Orange   |                                                 |
| Seminole Tangelo          |                                                 |
| Minneole Tangelo          |                                                 |
| Java Grape fruit          |                                                 |

All these seeds were sown at Barkly Station and about 8,000 plants were raised. Nurseries are to be established at Barkly, Richelieu, Reduit and Curepipe Experiment Stations.

Rough lemon seeds were also received from Australia.

#### OTHER FRUIT

Mamee Sapote (*Lucuma mammosa*) and Julie mango material was obtained from Trinidad.

#### PROPAGATION

The following grafted plants were produced for sale:—

|                           |        |      |
|---------------------------|--------|------|
| Avocado grafts            | ... .. | 45   |
| Avocado seedlings         | ... .. | 611  |
| Breadfruit                | ... .. | 1183 |
| Coconut seedlings (Local) | ... .. | 227  |
| Coconut seedlings (Pemba) | ... .. | 242  |
| Litchi layers             | ... .. | 1572 |
| Mango grafts              | ... .. | 1955 |
| Loquat grafts             | ... .. | 200  |
| Peach grafts              | ... .. | 790  |
| Citrus seedlings          | ... .. | 4104 |



The sale of citrus seedlings has now been discontinued at Barkly Station. These plants may still be obtained from Abercrombie Nurseries.

### VEGETABLE SEED PRODUCTION

These seeds were produced at Barkly Station (7 acres), Reduit (5 acres), Richelieu Station (4 acres) and Pamplemousses Station ( $\frac{1}{2}$  acre).

|                             | Kilogs |
|-----------------------------|--------|
| Beans (All varieties) ...   | 1,460  |
| Brède de chine :            |        |
| Baton blanc ... ..          | 113    |
| Bouquet ... ..              | 48     |
| Sale ... ..                 | 1'3    |
| Bringel ;                   |        |
| Rosita ... ..               | 2'5    |
| Farcie ... ..               | 1'2    |
| Brède martin ... ..         | 19'0   |
| Carrot-Chantenay ... ..     | 9'0    |
| Cauliflower ... ..          | 6'5    |
| Cow peas ... ..             | 95'0   |
| Leek ... ..                 | 1'0    |
| Lettuce (All varieties) ... | 17'5   |
| Peas :                      |        |
| Green feast ... ..          | 30'0   |
| Local ... ..                | 448'0  |
| Petsai ... ..               | 20'5   |
| Radish ... ..               | 3'0    |
| Rave ... ..                 | 35'0   |
| Salsify ... ..              | 10'0   |
| Tomato :                    |        |
| Marglobe ... ..             | 1'8    |
| Pomme d'amour ... ..        | 5'0    |
| Squash ... ..               | 13'0   |

The season was favourable for seed production and no serious outbreaks of pests and diseases occurred.

Other seed crops were raised but as yet they have not been released for sale. These were mainly cabbage and beetroot varieties.

Improvements in technique have been effective in bringing about more intensive production of seed. Notably the use of soil-blocks of John Innes Potting Compost has improved uniformity in many crops and this has simplified the work of selection.

The introduction of spray-line irrigation equipment has proved a very valuable addition to this Station and a great reduction in the costs of watering should be achieved.

### SALE OF SEEDS AND PLANTS

#### Revenue

|                                     | Rs.                   | c. |
|-------------------------------------|-----------------------|----|
| Sale of seeds (B.E.S) ... ..        | 5,159                 | 80 |
| Sale of seeds (Abercrombie) ... ..  | Nil                   |    |
|                                     | <hr/> 5,159 80 <hr/>  |    |
| Sale of plants (B.E.S) ... ..       | 6,592                 | 15 |
| Sale of plants (Abercrombie) ... .. | 6,699                 | 50 |
|                                     | <hr/> 13,291 65 <hr/> |    |
| TOTAL ... ..                        | 13,291                | 65 |
|                                     | <hr/>                 |    |
| GRAND TOTAL ... ..                  | 18,451                | 45 |
|                                     | <hr/>                 |    |

(d) *Richelieu Experiment Station*.—Meteorological Data (Appendix XII).

This station is excessively dry, the annual rainfall being in the region of 30", most of which falls in January, February and March. At all other times of the year irrigation is essential.

#### MISCELLANEOUS WORKS

A new house for an Overseer and a labourers' camp of two houses as a unit have been completed.

1,900 ft of irrigation canal have been constructed.

2,000 ft of fencing have been erected.

Several acres of new land have been bulldozed and brought into cultivation.

At Pamplémousses Station tobacco barns of an improved type and a tobacco grading room have been completed. A reservoir of 56,000 cu. ft. has been constructed.

#### GENERAL

The three stations formerly operating as the Fibre Experiment Station, Richelieu Experiment Station (food crops) and the Tobacco Research Station have now been united as Richelieu Experiment Station.

Much progress has been achieved during the year in the mechanisation of operations, and the efficient working of irrigation equipment.

It is proposed to adapt the rotation employed on this station to the increased production of grass and fodder. This will partly replace the sugarcane and will allow a shorter rotation with a shorter period under arable crops. The fodder thus produced will be used to feed a small Creole dairy herd.

*Crops* (including crops at Pamplémousses E.S.).

(a) *Potatoes*.—It was considered necessary to obtain some basic data on the actual fertilizer requirements of potatoes as all previous work had been done on the assumption that N P K and farmyard manure gave increased yields.

A  $3^4$  factorial experiment was therefore laid down in order to test the validity of these assumptions. The treatments consisted of a low, medium and high dressing of N P K and Farmyard manure (full details in Appendix). It was shown that there was a significant difference between  $f_0$  (no manure) and  $f_1$  (15 tons farmyard manure) but none between  $f_1$  and  $f_2$  (30 tons farmyard manure per acre).

The response to nitrogen showed that  $n_1$  (15 kgs N/acre) was significantly better than  $n_0$  and also that  $n_2$  (30 kgs N/ per acre) was also significantly better than  $n_1$ . It would therefore appear that there is still a possibility of profitably increasing the nitrogen dressing.

No response to potash was obtained at all. This agrees with Craig's findings in S.R.S. bulletin No. 4 (p. 21) on soils of this region.

With phosphorus it was shown that  $p_1$  and  $p_2$  (20 kgs and 40 kgs  $P_2O_5$  per acre respectively) were significantly better than  $p_0$  but there was only a slight difference between  $p_2$  and  $p_1$ .

It would appear therefore that an economical dressing for potatoes on these soils would be:—

150 kgs sulphate ammonia  
65 kgs superphosphate  
15 tons farmyard manure

The mean yield of such plots as for such a dressing was 11.5 metric tons per acre.

A second trial at Pamplémousses Experimental Station (Appendix XVII) was laid down to test the effect of three spacings and three different fertilizer dressings. It was shown that a close spacing (18" × 9") was significantly better than the wider spacings (18" × 12" and 18" × 15"). There were no significant differences between the fertilizer dressings (A—30 tons FYM. B—500 kgs. artificials and C—1,000 kgs of artificials per acre).

Bacterial wilt was fairly high in the experiment, being 10.8 per cent and leaf roll was recorded at 2.8 per cent.

It has been found that mechanical preparation of the land up to planting is quite feasible, furrows being pulled with a Ferguson tractor and ridger. Potatoes were covered by splitting the ridges in the conventional manner. This in no way reduces yields. Very uniform results were obtained with mechanical spraying equipment which gave much more satisfactory results than hand spraying.

*Maize.*—Two maize spacing and fertilizer trials were carried out at Richelieu Experiment Station to investigate the effect of three different spacings and four fertilizer treatments.

|               |                                                      |
|---------------|------------------------------------------------------|
| S1 — 3' × 1'  | F1 — Control                                         |
| S2 — 3' × 1½' | F2 — 250 kgs. 3-18-9 N+K                             |
| S3 — 3' × 2'  | F3 — 2 tons FYM/acre                                 |
|               | F4 — 2 tons FYM + 200 lbs. phosphatic guano per acre |

In the first trial there were no significant differences between treatments. In the second trial  $F_3$  was significantly better than  $F_1$ ,  $F_2$  and  $F_4$ , and  $S_2 + S_3$  were significantly better than  $S_1$ . (Appendix XVIIIa).

1. *Tobacco.*—At Richelieu Experiment Station the plantations consisted of two fields of flue-cured Virginian varieties (3.44 acres) and one field of a Burley variety—Amarello.

One of the fields of flue-cured Virginian varieties consisted of Black Shank resistant Yellow Mammoth grown for seed production purposes and of small plots of Bonanza, Jamaica Wrapper and Rg. hybrids. The Bonanza and Jamaica Wrapper plots suffered heavily from Black Shank disease and no seed from these was collected. The Yellow Mammoth resistant and the Rg. hybrids were all very resistant to the disease. Rg. is a cigar wrapper variety from Florida, highly resistant to Black Shank disease. It has been crossed with many flue-cured Virginian varieties at Richelieu. The hybrids are highly resistant to disease though their leaf is not of the same high quality as those of the parent flue-cured varieties.

The second field of flue-cured Virginian varieties was planted with two experiments, viz., the manurial experiment and the Soil Block versus transplants experiment. Both experiments were planted with the Yellow Mammoth resistant. The Amarello field was grown for seed production purposes.



At Pamplona Experiment Station a small field of 0.28 acres was planted with the variety Anacollo and in other fields 1.28 acres were planted with the-early Virginian varieties. These consisted of Bonanza and Jamaica Wrapper plots for seed production purposes, and a number of recent introductions for observation and selection.

# TOBACCO SOWINGS

2.-(a) At Kichelev Experiment Station tobacco seed was sown in beds and in seed cases from 20.1.55 to 23.1.55. The beds were of 24' x 4', with 3' paths between beds. The surface of the beds were raised to about 4" above the path to provide good drainage. The beds were soaked with slush containing compound 150 lbs of the mixture was used for each bed of 100 ft<sup>2</sup>. Manure (FYM) was applied on the surface of the beds at the rate of 5 ft<sup>3</sup> per bed. 1 kg of a ferment manure was applied on the surface of each bed. Seed was sown at the rate of 15 gms per bed. 100 gms of Agricole 7 mixed with dry soil or basalt dust was applied along the perimeter of the beds after sowing to control red ants. Chesham compound was applied at three week intervals after sowing. Potom and lead arsenate were sprayed on the young plants at 10 days' interval. An abundant supply of healthy, strong seedlings was available at all times for planting the fields.

(b) Seed was also sown in seed cases. A large number of seed cases were prepared with various mixtures of manure, sterilised soil, sand and fertilizers. There were striking differences between the various treatments, but it seems that there is still room for further experiments before the best mixture is found.

(c) A number of soil blocks were prepared with the mixture which had given best results in the 1954 experiments, viz., 7 parts FYM, 8 parts sterilised soil and 2 parts sand + 2 kgs of sulphate of ammonia, 2 kgs of superphosphate and 1 kg of sulphate of potash per cubic yard of mixture. Young plants from the seed beds or seed cases were pricked into the soil blocks. The main results were—

- (1) plants with leaves about 1" in diameter gave best results, viz., a better strike and quicker growth afterwards;
- (2) soil treated with formaldehyde (6 oz. of 40 per cent formaldehyde diluted with two gallons of water and applied to 4 ft x 8 of soil in a drum covered with a hessian and left for 15 days) gave results as good as steam sterilisation of the soil as regards freedom of disease in the blocks.

(d) Some chlordane was obtained in September for a small experiment re the control of red ants. The chlordane was applied to the beds at the following rates:—

- (1) 54 c.c. of chlordane per bed of 100 feet<sup>2</sup>=1 bed
- (2) 36 c.c. of chlordane per bed of 100 feet<sup>2</sup>=2 beds
- (3) 24 c.c. of chlordane per bed of 100 feet<sup>2</sup>=3 beds
- (4) 100 gms Agricole 7 per bed of 100 feet<sup>2</sup>=7 beds

The amount of chlordane for one bed was put with two gallons of water in a watering can and applied to the bed immediately after sowing. The Agricole 7 was diluted with dry soil and applied around the perimeter of the bed immediately after sowing.

Results: Chlordane gave complete control of the red ants—Gammexane gives only partial control and has a deleterious effect on the germinating seeds. The beds treated with Gammexane were patchy—the beds treated with chlordane were very uniform, but too thick. The seed rate should be reduced considerably.

(c) At Pamplémousses Experiment Station all plants were raised in seed beds.

3. *Field Notes.*—At Richelieu Experiment Station planting in the fields started on 23rd February. Much rain occurred on the 26th and 27th February. The overhead irrigation was of great help during the dry weather. A good stand was established in all fields within a fortnight after planting. The season was generally favourable to the production of good quality tobacco. Yields were fair and the quality the highest recorded on the Station.

At Pamplémousses Experiment Station weather conditions were very good. High quality tobacco was produced from all plots. Incidence of Black Shank disease was low—even the highly susceptible varieties suffered very little from the disease. Incidence of frog eye (*Cercospora nicotianae* Ell and Ev), alternaria leaf spot and mildew (*Oidium tabaci*, D.C.) was small.

4.—(a) *Selection and Seed Production.*—Mass selection was carried out in the plots of the commercial varieties at Richelieu Experiment Station and Pamplémousses Experiment Station for seed production purposes. The flower heads of suitable plants were bagged and the seed obtained was of good quality. All seed was passed through the seed separator to remove chaff and light seed. The clean seed was disinfected in 10% solution of silver nitrate and forwarded to the Tobacco Board for distribution to tobacco growers.

(b) The following quantities of seed (1955) were available for distribution to growers at the end of the year:—

|                              | Kilos |
|------------------------------|-------|
| Amarello ... ..              | 10    |
| Bonanza ... ..               | 2.5   |
| Jamaica Wrapper ... ..       | 3.5   |
| Yellow Mammoth resistant ... | 12.0  |
|                              | <hr/> |
|                              | 28    |
|                              | <hr/> |

(c) Some ten plants were selected in each of the other varieties, including the recent introductions. The seed from the selected plants was bulked for each variety for further trials. Some of the new introductions, e.g. Hicks, Delcrest and Harrison Special, appear to be very promising.

5.—(a) *Manurial Experiment* (Appendix XIII).—Object: to find the effect of five manurial treatments on tobacco yield, grade index, etc., of tobacco leaf.

(b) Treatment  $t_1$  = 0 ton fym p/acre + 0 ton goat manure p/acre.

$t_2$  = 5 tons fym p/acre.

$t_3$  = 10 tons fym p/acre.

$t_4$  = 2 tons goat manure p/acre.

$t_5$  = 5 tons fym p/acre + 2 tons goat manure p/acre.

(c) Design: Randomised blocks; 4 replications; plots  $\frac{1.4}{6.05}$  acre (0.02314 acre) = 14 rows of 24' — Spacing 3'  $\times$  1½'.

(d) Experimental details: all plots received a dressing of 80 ks per acre of Dutch fertilizer 10: 28: 14 in addition to particular manurial treatment. Seed sown 23/1/55. Planted on 22—23rd February, 1955. Recruited on March 3rd, 1955. Variety: Yellow Mammoth resistant.

(e) Field Data: Plantation fair—no visible difference between treatments—incidence of disease and insect pests small.

No significant difference between treatments in stand, yield, grade index root infection.

Roots of plants were examined for Black Shank and nematodes after harvest. A high percentage infection was recorded in all plots.

6.—(a) *Soil Blocks versus Transplants Experiment* (Appendix XIV).—Object: to compare the effect of direct transplants and soil blocks on the yield grade index, etc., of tobacco.

(b) Treatments:  $t_1$  Transplants.

$t_2$  Soil blocks.

(c) Design: Randomised blocks, 3 replications, plots of 76 rows of 16 plants, spacing  $3' \times 1\frac{1}{2}'$ —plots  $5472 \text{ ft}^2 = 0.1256198$ .

(d) Experimental Details: Soil blocks prepared by Goradam machine with a mixture of 7 parts F.Y.M., 3 parts sterilised soil and 2 part sand. The plants from beds (size of leaf about  $\frac{1}{2}$  in.) were pricked on the soil blocks. The tall hardened plants from the same beds were used to plant the 'transplant' plots. All plots received Dutch fertilizer 10: 28: 14 at the rate of 80 ks per acre.

No significant differences were obtained owing to small difference in yield. 'Soil Blocks' gave a better stand at the start (very little recruiting), growth of plants was rapid and uniform, and harvest was started and completed earlier. Yield of seed was low in the 'soil block' plants, due to a shortened cycle and absence of suckering.

7. *Tobacco Production—Richelieu Experiment Station, Pamplemousses Experiment Station.*

|              | Acreage<br>Local<br>Amarello<br>F   cured | Acreage<br>New<br>Varieties<br>F   cured | Total<br>Acreage | Price per kilo    |                  |
|--------------|-------------------------------------------|------------------------------------------|------------------|-------------------|------------------|
|              |                                           |                                          |                  | Local<br>Amarello | New<br>Varieties |
|              |                                           |                                          |                  | Rs. c.            | Rs. c.           |
| R. E. S. ... | 3.44                                      | 3.80                                     | 7.24             | 4 57              | 5 41             |
| P. E. S. ... | 0.28                                      | 1.28                                     | 1.56             | 5 17              | 5 59             |
| TOTAL ...    | 3.72                                      | 5.08                                     | 8.80             | 4 48              | 5 46             |

8.—(a) *Barn and Curing.*—At Richelieu Experiment Station an old small boiler was obtained to supply steam to the barns.

(b) At Pamplemousses Experiment Station, the construction of two barns of  $12' \times 12' \times 20'$  high was started. The walls were made of concrete blocks with vertical channels in the side walls for the return of hot air from the top of the barn to the space underneath the flues. The flues have been placed in troughs. The wall, made of compressed cement-chipping blocks, is cheaper than the standard dressed basalt wall used in the construction of barns in Mauritius. The barn will be experimented with next season: there should be a great saving in fuel and a more even cure.



(c) All the tobacco from Richelieu Experiment Station and Pamplemousses Experiment Station was cured at Richelieu Experiment Station. The yellowing stage was carried out at 100°F. with approximately 100 per cent humidity, the fixing was done with the wet bulb reading 100–102°F. The small boiler could not provide sufficient steam to maintain a saturated atmosphere in the barn and water was sprayed to supplement the steam.

In general the curing was very good. Very little ventilation was required at the end of the fixing stage or during the drying of the midrib of the leaf. Fuel consumption was low. The tobacco produced was in general of very bright colour the best produced at the station so far.

#### FIBRE

1. *Furcraea*.—No leaf was harvested in 1955 in the experimental plots planted in 1950 to 1953. Most of the ripe leaf was too short, i.e., under 3'.

The land on which the *Furcraea* was planted lies at the foot of Petit Malabar Hill; the soil is partly black and partly red. The area was under cane before 1930, and was abandoned until 1950, when the first *Furcraea* was planted. Most of the area was found to be under *Herbe Polisson* (*Heteropogon contortus*), the dominant species in the dry lowlands of Mauritius. During the dry season the grass was usually burnt. There are some spiny shrubs, mainly *Pithecolobium*, and a fair amount of wild *Furcraea* and acacia mainly in the red soil on the more elevated stony areas. The low lying black soil supports little more than the *Heteropogon*.

None of the *Furcraea* planted ever made satisfactory growth. The plantations made in the black soil are stunted, and the leaves have a pronounced reddish yellow colour. Even the acacia interplanted with some of the aloe has made very little growth in five years and was very difficult to establish.

The plantations made on the reddish soil are also poor in general though not so bad as those on the black soil. The only exceptions are the plants under the shade of the *Pithecolobium* or acacia and the plants on the borders of the fields. In some plantations, acacia (wild growth) has established itself with good effect on the aloe. Too dense shade seems to have a detrimental effect on the acacia. In two experiments, 13/52 and 14/51, acacia has been planted on both sides of a double row of aloe and also in the middle of the double row. The shade is so dense that there are practically no weeds in the plantations. The aloe plants are green, but have few, long, narrow and unripened leaves.

In one field (black soil) trenches were dug between the double rows to improve drainage—this was done towards the end of the rainy season of 1955. There seems to be a slight improvement but this will probably be more apparent at the end of the next rainy season.

All the aloe plants in the low-lying poorly drained fields have a typical black rot of the bottom leaves.

More information on the individual trials is given in Appendix XV.

2. *Sisal*.—A small plot established on blackish soil has made fair progress.

3.—(a) *Soft Fibres*.—Seed of Congo jute (*Urena lobata*) was obtained from Gold Coast and planted in March at Richelieu Experiment Station. This late plantation did not make much growth, but seed was collected from it. Roselle (*Hibiscus sabdariffa*) and Kenaf (*Hibiscus cannabinus*) were also planted. The retting of these two took a long time, which is a great drawback. *Urena lobata* retting in Gold Coast takes about a fortnight.

(b) Some seed of *Urena lobata* was obtained again from Gold Coast at the middle of 1955. This and the seed obtained from the above plantations was used for new plantations at the end of the year. The *Urena lobata*, Kenaf and Roselle have been planted at fortnightly intervals, starting mid-November 1955. They have been planted at 6", 12", 18" and 24" interrow spacings, with 6" in the row. All the plantations have made good progress.

#### RICE

Small experiments on rice were carried out at Richelieu Experiment Station and Pamplemousses Experiment Station. Difficulties were encountered with the water supply and the quality of the crop was poor. Yields of approximately 2,500 lbs of paddy were obtained.

#### SUGARCANE

In 1955 407.21 metric tons of canes were harvested from 13.6 acres; the mean yield was 30 tons per acre. The canes were sent to Médine Factory.

The canes from approximately 4 acres of the Barbados varieties 3337, 37161, 37172 were sold as planting material to sugarcane planters. Two acres of the Barbados varieties 37161 and 37172 have been planted to supply planting material for small growers.

Some two acres of the following new varieties bred by the Sugarcane Research Station and Mauritius Sugar Industry Research Institute: M129/43, M31/45 and M147/44 have been planted at Richelieu. The varieties might be released as commercial varieties in 1956, in which case the plots at Richelieu will supply planting material to some small growers.

#### Garlic (Pamplemousses Experiment Station).

A yield of 3,184 kgs acre was recorded on land previously planted to beans, whilst on old tobacco beds a yield of 4,356 kgs per acre was achieved. It would appear that Garlic would be a paying crop on old tobacco seed beds, making use of the residual fertilizer.

Yields of Ginger and Turmeric at Pamplemousses Experiment Station were very low.

#### YAMS

A yam collection at Pamplemousses Experiment Station showed that some varieties are capable of yielding 10 tons per acre, in a growing season of eight months, with an application of only 5 tons farmyard manure per acre (Appendix XIX).

#### FODDERS

A collection of grasses at Pamplemousses Experiment Station showed that a very high yield of Elephant Grass can be obtained with adequate fertilization. Over 100 tons being obtained in five cuttings.

Other grasses did not perform as well, yields of *Setaria sphacelata*, *Panicum makarikariensis*, and *Panicum maximum* being in the region of 25 tons per acre (See Appendix XX).

*Acacia (Leucaena glauca)*.—This is one of the most promising leguminous fodders at present being grown. It has been found that it is quite possible to mechanise this crop when grown on the flat, by cutting with a Ferguson tractor and cutter bar with a tray attached to the cutter bar. The cut material is loaded by hand into a trailer pulled by the same tractor.

Yields appear to be determined very largely by the amount of rainfall or irrigation that the crop receives. One field has produced 8.89 tons per acre in 1955 but the majority of this was subsequent to two irrigations. Rainfall during six months was less than 2".

At Pamplemousses Experiment Station a yield of 35.9 tons per acre has been obtained without irrigation but under a rainfall of 70 inches.

Silage has also been made from *Acacia* with the addition of molasses. The quality of this has not yet been determined but should be of a high protein content.

*Revenue at Richelieu Experiment Station:—*

|                                    |        | Rs.           | c.        |
|------------------------------------|--------|---------------|-----------|
| Sale of cane to Medine S.E. (1954) | ...    | 11,442        | 44        |
| Sale of tobacco leaf               | ... .. | 20,274        | 19        |
| Sale of other produce              | ... .. | 5,608         | 47        |
| <b>TOTAL</b>                       | ... .. | <b>37,328</b> | <b>10</b> |

#### GRASSLAND EXPERIMENTAL WORK

A big improvement has been obtained in the grass at Plaisance. This has been achieved largely regular cutting and fertilizing. Hand weeding has been completely eliminated due to the much higher production of grass.

(a) *Grass Species*.—Observations indicate the usefulness of *Setaria sphacelata* varieties on widely differing soil types but no accurate recording of yields was made during the year.

(b) *Legume Species*.—Investigations on *Leucaena glauca* have shown:—

- (i) that a protein concentrate can be prepared from the leaves of the shrub.
- (ii) That a yield of 4 or 5 tons dried leaf per acre per annum should be obtainable under non irrigated conditions in the wetter, coastal districts of the island.
- (iii) That samples dried on the Slade-Curran drier and samples dried in the open air gave crude protein analyses of 33 per cent and 23 per cent on dry matter respectively. These differences may not be due to different drying methods as the fresh material was not the same in each case.

(c) *Introduced Species*.—A sample of seed of brazilian lucerne, *Stylosanthis gracilis* from Ceylon was sown at Central Experiment Station and at Curepipe Experiment Station in June. Germination was fairly rapid but establishment from the seedling stage was very slow. Growth since October has been much more satisfactory and good stands have resulted.



A consignment of seed from the Grassland Research Station, Kitale, Kenya included three species of *Dolichos* and a selected strain of *Centrosema pubescens*. These were sown in observation plots at Plaisance at the end of the year.

(d) *Mechanization*.—Comparative costings were made on grass-cutting by hand and by Ferguson tractor and cutter bar. Elephant grass was the cheapest to cut by hand, at Rs 28 (42/-) per acre, and tractor cutting reduced this to Rs 4 (6/-).

Costings were made on clearing light scrub by hand and by Ferguson tractor and terracer blade. Costs were Rs 100 (£7-10/) and Rs 30 (£2-5/) per acre respectively.

*Allotments*.—The allotment scheme continued to operate, but with only a comparatively small amount of success. Many of the tenants regard this scheme as being for the provision of a free house and have little inclination or ability to cultivate their holdings efficiently. This applies particularly to Curepipe and Malherbes.

A summary of the position during the year with respect to number of allottees, houses repaired, etc., is at Appendix XXII.

## Rodrigues Division

### Staff

Mr. S. Bagwant, Assistant Agricultural Officer, left Rodrigues in February after having completed his tour of service in the dependency.

The staff then consisted of Messrs. C. M. Courtois, Agricultural Officer, E. Farla, Assistant Agricultural Officer, and J. Abraham Overseer Grade II, until August, when Mr. P. L. Hotchin joined as Senior Agricultural Officer.

### Climatic conditions

Monthly rainfall was recorded at Oyster Bay Experiment Station and a rain gauge having been placed at La Ferme demonstration plot since September, 1955, rainfall figures are now available for that locality as follows:

| Months        | Rainfall            |                        | No. of<br>rainy<br>days | Highest rain-<br>fall in one day |                  |
|---------------|---------------------|------------------------|-------------------------|----------------------------------|------------------|
|               | Year<br>1955<br>mm. | Mean<br>1950-54<br>mm. |                         | mm.                              | date             |
| January ...   | 25.5                | 119.9                  | 6                       | 11.1                             | on 28th          |
| February ...  | 73.76               | 169.6                  | 12                      | 21.3                             | on 28th          |
| March ...     | 145.3               | 126.3                  | 20                      | 32.7                             | on 16th          |
| April ...     | 171.0               | 178.6                  | 12                      | 43.0                             | on 28th          |
| May ...       | 171.9               | 183.0                  | 16                      | 33.2                             | on 5th           |
| June ...      | 56.2                | 93.5                   | 20                      | 7.1                              | on 16th          |
| July ...      | 90.0                | 85.8                   | 14                      | 31.6                             | on 22nd          |
| August ...    | 69.5                | 78.5                   | 14                      | 8.7                              | on { 5th<br>17th |
| September ... | 17.4                | 38.1                   | 6                       | 7.9                              | on 26th          |
| October ...   | 0.16                | 54.3                   | 3                       | 0.8                              | on 14th          |
| November ...  | 39.1                | 55.6                   | 11                      | 11.5                             | on 12th          |
| December ...  | 179.4               | 132.9                  | 15                      | 75.2                             | on 3rd           |

### General

Foodcrops were cultivated on a large scale this year, as more land was leased to planters.

Maize was the main crop, but unfortunately the American rust, caused by the fungus *Puccinia polysora* found its way into Rodrigues and much damage was suffered by the maize crop. The disease was reported in several localities and was also observed at the Experiment Station. During winter the disease was not recorded on maize grown at the station. It is hoped that resistant strains will, in the near future, be imported.

Onion crops suffered from severe attacks of *Thrips tabaci* and every effort was made to combat the insect by using wettable DDT, Gammexane and tobacco leaf decoction, but some crops were considerably damaged.

The cattle census was held on the 25th March with the following results:—

|               | 1955  | 1954  | 1953  | 1952  |
|---------------|-------|-------|-------|-------|
| Cattle ... .. | 6,212 | 5,430 | 5,504 | 5,235 |
| Sheep ... ..  | 2,530 | 2,657 | 4,080 | 3,842 |
| Goats ... ..  | 3,219 | 3,206 | 3,956 | 4,837 |
| Pigs ... ..   | 2,536 | 2,916 | 2,856 | 3,198 |

Several cattle-owners applied for permission to bring milch-cows from the Cattle-walk near to their residences, in order to obtain milk for their own use and also for trading. Such permits were granted on the condition that the animals be kept in a shed or tethered. Permits were also granted for the keeping of pack animals.

#### (a) VEGETABLE SECTION

Vegetables were grown during the whole year for the production of acclimatised seeds. During the drought period, shades had to be used. The lack of irrigation water was a limiting factor. Seedlings as well as seeds were distributed to school gardens, demonstration plots and also to planters who applied for them.

At the station, a yield trial was made with Victory bean and the yield per acre was 432 kg dry seeds.

#### (b) FOODCROP SECTION

Experiments were carried out with various foodcrops with regard to: planting distance, fertilizer treatment and yield.

*Maize.*—The following results were obtained from a combined high fertilizer treatment and spacing trial:—

|                    |            |               |  | Fertilizer treatment per acre              |                                                 |                                                                                      |
|--------------------|------------|---------------|--|--------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------|
| Spacing<br>in feet |            |               |  | 2 tons<br>Farm yard<br>manure<br>No. fert. | 2 tons FYM +<br>200 kgs.<br>Phosphatic<br>guano | No. FYM 250 kgs.<br>of a mixt. S/Amm.,<br>Mur./Pot., & P/Guano<br>cont. N.P.K=3-18-9 |
|                    |            |               |  |                                            |                                                 |                                                                                      |
| 3×1 ... ..         | Yield-Kgs. | Seed/Acre ... |  | 818                                        | 900                                             | 955                                                                                  |
| 3×1½ ... ..        | Yield-Kgs. | Seed/Acre ... |  | 1,193                                      | 1,180                                           | 743                                                                                  |
| 3×2 ... ..         | Yield-Kgs. | Seed/Acre ... |  | 655                                        | 630                                             | 831                                                                                  |

Control—709 kgs. Seeds/Acre.

A small amount of selected maize seeds (77 lbs) was issued to planters on an exchange basis.

*Groundnut.*—A fertilizer yield trial was made and the following results obtained:—

*Fertilizer treatment:*—

125 kg. s/ammonia, 50 kg. s/potash; and  
125 kg. superphosphate per acre.

| Variety               | Yield     |           |
|-----------------------|-----------|-----------|
|                       | Kilog dry | nuls acre |
| Cabris ... ..         | ...       | 1311      |
| ViganLupog ... ..     | ...       | 1129      |
| Local ... ..          | ...       | 1049      |
| Tirik ... ..          | ...       | 1029      |
| Virginia ... ..       | ...       | 1008      |
| Spanish ... ..        | ...       | 945       |
| Bunch ... ..          | ...       | 847       |
| Virginia Bunch ... .. | ...       | 887       |
| Valencia ... ..       | ...       | 484       |

*Yams.*—A trial was made using phosphatic guano: 300 kg/a; wood ashes: 150 kg/a, compost: 1 ton/a.

Planting was made on mounds 3 ft. distant and 1½ ft. in the row. Date planted: 28th October, 1954. Harvested: 12th September, 1955.

| Variety           | Gross     | Net       | Variety           | Gross     | Net       |
|-------------------|-----------|-----------|-------------------|-----------|-----------|
|                   | Yield     | Yield     |                   | Yield     | Yield     |
|                   | kgs./acre | kgs./acre |                   | kgs./acre | kgs./acre |
| Angiliala ... ..  | 14,093    | 12,690    | Bottleneck ... .. | 10,533    | 5,825     |
| Crop ... ..       | 8,114     | 6,620     | Cush ... ..       | 13,381    | 11,032    |
| Danish ... ..     | 8,398     | 6,263     | Horn ... ..       | 13,965    | 11,545    |
| Light Red ... ..  | 7,544     | 5,551     | Lisbon ... ..     | 16,086    | 15,093    |
| Oriental ... ..   | 8,968     | 7,402     | Rattawali ... ..  | 14,947    | 12,527    |
| Sealed top ... .. | 7,117     | 4,982     | Fugue ... ..      | 4,128     | 3,316     |
| Cush-Cush ... ..  | 11,246    | 10,392    | Local ... ..      | 8,250     | 7,829     |

604 lbs of tubers were sold to the public for use as seeds.

*Manioc.*—Manioc trials started on the 25th October and 25th November, 1954, now being harvested and final yield figures are not yet available. Harvesting was deferred with a view to obtaining in the appropriate time, planting material for newly created anti-erosion demonstration plots.

*Sweet potatoes.*—The crop was heavily attacked by a leaf-roller: *Nacoleia practeritalis* and was a failure despite sprayings with wettable DDT. The crop was uprooted and used for donkeys working as pack animals.

*Potato.*—A trial was made using cut and whole tubers with a fertilizer treatment of: 125 kg. s/ammonia, 50 kg. s/potash and 125 kg. superphosphate, per acre, with NO manure and another treatment consisting of: 20 tons farmyard manure and 4.5 tons wood ashes per acre. Yield was as follows:—

|                               | Kg/acre | Planted weight | Harvest weight |
|-------------------------------|---------|----------------|----------------|
| Cut tubers Ash + FYM ... ..   | 5,922   | 1              | 4'3            |
| Whole tubers Ash + FYM ... .. | 8,852   | 1              | 9              |
| Cut tubers N P K ... ..       | 8,521   | 1              | 4'6            |
| Whole tubers N P K ... ..     | 9,974   | 1              | 3'3            |

1,776 kg tubers were sold to the public.

### (c) MISCELLANEOUS

*Turmeric.*—A yield trial was made with the following results: 43 lbs of seeds planted on a plot of 780 sq. ft. in area, produced 118 kg. roots or 6,617 kg. per acre.



**Tobacco.**—About  $\frac{3}{4}$  acre of Amarello tobacco was grown at Oyster Bay Station. This produced a first crop of 77 kgs of air-cured leaves which were exported to the Tobacco Warehouse. About 70 kg. more of air-cured leaves are expected soon.

Only one planter was interested in growing tobacco during 1955. He has forwarded to the Agricultural Station, three bales containing 165 kg. of air-cured Amarello tobacco. This tobacco and that produced by the Agricultural Station, were packed in waterproofing material and sent to the Tobacco Warehouse, Port Louis.

**Fodder.**—Two fodder plots have been started at the Experiment Station. The grasses used are: Elephant grass, kikuyu grass and sugar cane. Other fodder plants such as *Setaria* spp., Molasses grass, Elephant grass and sugar-cane are also being used on experimental plots.

### Plant Propagation

The following ornamental plants, fruits trees and economic plants were distributed free to the public and to Government institutions:—

|                                        | Public | Govt.<br>Institu-<br>tions |
|----------------------------------------|--------|----------------------------|
| Ornamental plants ... ..               | 708    | 54                         |
| Economic plants and fruit trees ...    | 718    | 29                         |
| Miscellaneous plants (Palms, etc.) ... | 518    | 32                         |
| Coconut seedlings ... ..               | —      | 58                         |

(These seedlings were used for recruiting government coconut plantations at Baie du Nord and Port Sud Est).

The following plants were sold to the public:—

|                   |                                  |
|-------------------|----------------------------------|
| Citrus ... ..     | 844 plants sold at 10 cents each |
| Coconut ... ..    | 706 plants sold at 50 cents each |
| Breadfruit ... .. | 129 plants sold at 50 cents each |

(Sale of breadfruit plants started on the 1st May. Previously they were distributed free and were included in economic and fruit trees.

### Buildings

All government buildings were maintained. A hut was constructed at the Stock Farm for a labourer living on the spot and looking after the animals, especially the cobs, and also working as groom.

One latrine was built, using a concrete slab instead of the usual wooden slab.

At La Ferme demonstration plot, a 3-roomed stable is now under construction.

### Stock Farm

Births : 3 bull calves, 2 heifers  
Deaths: 1 heifer  
Sales : 2 young bulls for Rs 630

(a) **Cattle:**—

2 cows for Rs 460 (local breed)

No. of animals in hand: 1 bull, 6 cows, 5 bull calves, 5 heifers. Total: 17,

Fifty-nine head of private-owned cattle were grazing with the government herd and used the same cattle pen. These cattle are being gradually removed from the Government herd and there are now, only 15 head belonging to employees of the Agricultural Station. These cattle will eventually be removed.

(b) *Cobs*:—

There are three cobs used as riding horses.

(c) *Mules*:—

There are two mules used for riding.

(d) *Donkeys*:—

Births : 3 jacks, 3 jennies

Deaths: 1 jenny

Sales : 2 jacks and 1 jenny for Rs 340

No. of animals in hand: 7 jacks, 13 jennies, total 20.

The donkeys are now used as pack animals for carrying manure, planting material, fertilizers, etc., to newly created demonstration plots.

(e) *Sheep*:—

Births : 6 male kids, 4 female kids.

Deaths: Nil

Sales : 1 ram and 3 ewes for Rs 150.50.

No. of animals in hand: 2 rams, 7 ewes, 7 male kids, 7 female kids.

Total: 23.

(f) *Pigs*:—

Six piglets which had been bought locally were sold by auction for Rs 241.

(g) *Poultry*:—

*Rhode Island Red*:—

Deaths: 4 cocks, 2 hens.

Sales: 2 cocks and 3 hens for Rs 48.75.

No. of birds in hand: 15 cocks, 29 hens, 45 chicks. Total: 89.

*White Leghorn*:—

Deaths: Nil.

Sales: 1 cock for Rs 6.25.

No. of birds in hand: 1 cock, 2 hens, Total: 3.

*Turkeys*:—

Deaths: 8 cocks, 4 hens.

Sales: Nil.

No. of birds in hand: 2 cocks, 11 hens. Total: 13.

| Eggs                 | No.<br>produced | No. sold | Placed in<br>incubator<br>or under<br>hens | Broken<br>and fed<br>to chicks |
|----------------------|-----------------|----------|--------------------------------------------|--------------------------------|
| Rhode Island Red ... | 1,081           | 1,921    | 112                                        | 48                             |
| White Leghorn ...    | 174             | 153      | 18                                         | 3                              |
| Turkey ...           | 298             | 197      | 77                                         | 17                             |

### Anti-Erosion Works

Anti-erosion walls were constructed on 85.5 acres of land from January to the end of August, in the following localities: Camp du Roi, Mt. Kali, Union, Barrage, Safran, Acacia, Baie Malgache, Cascade Jean Louis, Chateau

de Fleurs, Mt. Bois Noir, Manique, Mangues, Nouvelle Découverte, Palissade Ternel, St. Gabriel, Pampée, Piments, 3 Soleils, Mt. Tonnerre, Reposoir, Quatre Vents, Limons, Battue Madame and Patate Theophile.

Acreage contoured: 85.5

No. of feet of walls constructed: 75,086

Total cost: Rs 25,426.05

Cost per foot: 34 cents.

Mr. A. d'Emmerez de Charmoy, Senior Agricultural Officer, while visiting Rodrigues in January, 1955, advised using grass strips in conjunction with contour walls in combating soil erosion. Grass strips were therefore used in localities where stones were scarce and where slope was too great. Such strips varied in width according to the gradient: they were 6 feet wide on slopes of 5 to 10 per cent, 8 feet wide on slopes of 20 per cent and 10 feet wide on slopes of 30 per cent. They were used on 81.5 acres of land in the following localities: Mt. Tonnerre, Mt. Bois Noir, Citrons, Grand Lafouche, Cascade Jean Louis, Piments, Mt. Cabris, Mangues, Baie Malgache, Quatre Vents, Palissade Ternel, La Ferme, Limons and Mt. du Sable.

Acreage under grass strips: 81.5

Total cost: Rs 1,462.25

Cost per acre: Rs 17.94.

Since the arrival of the Senior Agricultural Officer for Rodrigues, the use of contour walls has been temporarily suspended. Step dams were constructed in valleys, together with contour drains of a gradient 1: 100. At the same time, on the strips between the contour drains, ridges were made and tied together and the strips placed under cultivation. These step dams act as silt pits and retain both soil and water on the land.

### Coconut Plantations

Coconut field at Baie du Nord and Anse Ally were kept for coconut seed production. At Anse Ally a watchman has been appointed for looking after the field and preventing robbery. Seed beds will be prepared in both fields.

### Land Tenure

The Agricultural Officer and the Assistant Agricultural Officer spent most of their time in Rodrigues on land tenure work which was considerable during the year 1955. A large number of ex-soldiers returned from overseas service and applied for land. All agricultural lands were visited before being leased. There were also a considerable number of applications for residences, cattle posts, fishing posts, etc. The Agricultural Division was greatly helped by the Forest Department for visits to residences, cattle posts, etc., before such were leased. The number of leases were as follows:—

|                                      |     |     |     |     |       |
|--------------------------------------|-----|-----|-----|-----|-------|
| New leases for land                  | ... | ... | ... | ... | 263   |
| New leases for residence             | ... | ... | ... | ... | 53    |
| New leases for cattle posts          | ... | ... | ... | ... | 25    |
| New leases for fishing posts         | ... | ... | ... | ... | 2     |
| New leases for shop sites            | ... | ... | ... | ... | 3     |
| No. of leases renewed                | ... | ... | ... | ... | 1,219 |
| Total No. of leases made during 1955 |     |     |     |     | ...   |
|                                      |     |     |     |     | 1,565 |



### Experimental and Demonstration Plots

Another experimental plot was created at Baie Topaz in January, 1955, during the visit of Mr. A. d'Emmerez de Charmoy, Senior Agricultural Officer. The plot, of an extent of four acres, is designed to test the use of contour planting with grass strips to prevent soil erosion. Maize, Citrus, Pineapple, were cultivated on the plot. Recently anti-erosion works consisting of step-dams were started on the plot.

La Ferme demonstration plot was under the care of the Assistant Agricultural Officer and planters could visit it to see the use of grass strips, contour planting, etc. Various crops were also grown, showing planting distance, method and time of planting.

### Miscellaneous

Cleaning, weeding, trimming of hedges, maintenance of terraces, preparation of land for planting, etc., were carried out during the year, as routine work.

### Visitors

The following personalities visited the Agricultural Station during the year 1955: Mr. A. d'Emmerez de Charmoy, Senior Agricultural Officer, Mr. J. Todd, Assistant Conservator of Forests, Mr. Magistrate J. Vallet, Mr. Bott, General Manager of the Central Electricity Board, and Mrs. Bott, Mr. G. Bond, Director of Electricity and Telephones, Mr. J. B. S. Dahl, Government Architect, Mr. M. N. Lucie-Smith, Director of Agriculture, Dr. E. Millien, Liaison Officer for Agriculture, His Lordship the Bishop of Mauritius, Revd. D. Ignace, the Anglican Rector, Mr. and Mrs. Duncan Taylor and Dr. H. André, Deputy Director of Medical Services.

LIONEL JOHNSON,  
*Senior Agricultural Officer.*

## APPENDIX I

### METEOROLOGICAL DATA—CUREPIPE EXPERIMENT STATION

| month         | Rainfall in 1955 |        | Total duration of<br>bright sunshine<br>from 6 a.m. 7. p.m.<br>(in hours) |
|---------------|------------------|--------|---------------------------------------------------------------------------|
|               | mms.             | inches |                                                                           |
| January ...   | 205.8            | 8.1    | 216.40                                                                    |
| February ...  | 821.9            | 32.3   | 183.05                                                                    |
| March ...     | 728.4            | 28.6   | 146.01                                                                    |
| April ...     | 365.8            | 14.4   | 242.48                                                                    |
| May ...       | 252.8            | 9.9    | 221.47                                                                    |
| June ...      | 481.5            | 18.9   | 155.72                                                                    |
| July ...      | 243.3            | 9.5    | 195.57                                                                    |
| August ...    | 178.7            | 7.0    | 203.36                                                                    |
| September ... | 150.5            | 5.9    | 194.28                                                                    |
| October ...   | 44.1             | 1.7    | 174.45                                                                    |
| November ...  | 163.7            | 6.4    | 218.88                                                                    |
| December ...  | 448.2            | 17.6   | 178.00                                                                    |
| TOTAL ...     | 4,084.7          | 160.3  | 2,329.67                                                                  |

## APPENDIX II

This trial was to investigate the effect of fertilizer treatment on 14 different species of grass at Curepipe Station.  
Treatment 1.—No fertilizer (Control)

2.—Sulphate of Ammonia at 100 kg/acre in 3 applications

3.—Sulphate of Ammonia at 100 kg/acre

Phosphatic guano at 100 kg/acre

Muriate of Potash at 30 kg/acre

4.—Sulphate of Ammonia at 100 kg/acre

Phosphatic guano at 100 kg/acre.

YIELDS OF GREEN FODDER WERE AS FOLLOWS (in kg. per acre)

| Species                  | Control |         |         | N       |         |         | N P K   |         |         | N P     |         |         |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                          | 1st cut | 2nd cut | 3rd cut | 1st cut | 2nd cut | 3rd cut | 1st cut | 2nd cut | 3rd cut | 1st cut | 2nd cut | 3rd cut |
| Elephant grass ...       | 5,954   | 3,926   | 3,322   | 4,907   | 3,926   | 2,869   | 11,325  | 11,325  | 10,117  | 9,513   | 8,607   | 7,701   |
| Panicum maximum ...      | 5,609   | 4,228   | 2,869   | 7,323   | 5,909   | 3,624   | 9,815   | 9,739   | 5,134   | 8,735   | 5,909   | 3,775   |
| Panicum sp.* ...         | 5,954   | 4,228   | 4,003   | 4,077   | 4,228   | 3,095   | 5,587   | 7,248   | 3,322   | 4,550   | 2,865   | 2,285   |
| Setaria Bua River ...    | 7,021   | 1,355   | 6,040   | 9,890   | 1,434   | 7,097   | 9,513   | 4,756   | 11,551  | 7,097   | 1,355   | 6,795   |
| Setaria Kazungula* ...   | 7,474   | 1,812   | 3,926   | 7,323   | 1,510   | 3,694   | 8,003   | 4,228   | 5,889   | 6,115   | 9,815   | 3,699   |
| Chloris gayana ...       | 4,985   | 1,510   | 3,548   | 4,375   | 755     | 2,793   | 5,285   | 4,077   | 3,624   | 4,375   | 1,057   | 2,038   |
| Molasses grass† ...      | —       | 8,884   | 3,624   | —       | 7,172   | 2,285   | —       | 11,174  | 1,661   | —       | 5,134   | 2,114   |
| Panicum makarikari* ...  | 4,832   | 600     | 8,305   | 8,755   | 453     | 2,491   | 7,857   | 906     | 7,248   | 8,456   | 906     | 4,003   |
| Ischaemum aristatum ...  | 2,340   | 2,340   | 2,114   | 7,323   | 8,154   | 2,793   | 7,395   | 10,419  | 2,491   | 7,852   | 9,211   | 2,416   |
| Australian Paspalum ...  | 4,907   | 2,718   | 1,208   | 5,285   | 2,718   | 1,359   | 6,644   | 6,870   | 1,510   | 5,954   | 3,850   | 1,802   |
| Paspalum paniculatum ... | 4,681   | 3,322   | 1,510   | 4,204   | 2,944   | 1,359   | 5,813   | 9,211   | 1,963   | 3,699   | 2,265   | 1,434   |
| Kikuyu ...               | 4,655   | 2,114   | 1,132   | 5,436   | 3,399   | 1,208   | 2,793   | 4,681   | 1,208   | 4,530   | 1,796   | 9,815   |
| Paspalum notatum ...     | 4,077   | 7,021   | 2,038   | 9,590   | 10,796  | 3,171   | 9,966   | 12,155  | 4,228   | 7,625   | 11,237  | 4,228   |
| Akaroa Cock's foot ...   | 1,661   | 906     | 1,132   | 1,510   | 755     | 755     | 4,228   | 2,340   | 3,473   | 3,669   | 1,359   | 2,718   |

The following three species also were tried but with only two treatments—N P K & N P :—

|                       |       |       |       |
|-----------------------|-------|-------|-------|
| Phalaris tuberosa ... | 1,057 | 1,963 | 1,208 |
| Chloris teso ...      | 4,375 | 5,662 | 1,889 |
| Cenchrus ciliaris ..  | 4,375 | 5,436 | 2,038 |

\* These species were partly uprooted and supplied to Plaisance as planting materials on 17.3.55.

† This was replanted in the plots on 11.12.54.

## APPENDIX III

To investigate the effect of fertilizer on naturally occurring pasture at Curepipe Station.

This trial consisted of six treatments each duplicated on plots measuring 035 acres.

## TRIAL 1

Treatments 1—Control.

- do. 2— 50 kgs. Phosphatic guano per acre.  
do. 3—100 kgs. Phosphatic guano per acre.  
do. 4— 50 kgs. Superphosphate per acre.  
do. 5—100 kgs. Superphosphate per acre.  
do. 6—100 kgs. Superphosphate per acre.  
—100 kgs. Sulphate of ammonia per acre.  
— 30 kgs. Muriate of potash per acre.

Yields were as follows (in kg. per acre):—

|                 | A       |         | B       |         |
|-----------------|---------|---------|---------|---------|
|                 | 1st cut | 2nd cut | 1st cut | 2nd cut |
| Treatment 1 ... | 2,954   | 420     | 1,708   | 210     |
| do. 2 ...       | 1,904   | 238     | 1,638   | 462     |
| do. 3 ...       | 1,120   | 140     | 1,288   | 84      |
| do. 4 ...       | 1,232   | 364     | 4,900   | 154     |
| do. 5 ...       | 673     | 196     | 448     | 140     |
| do. 6 ...       | 1,652   | 224     | 1,876   | 252     |

The irregularity of these results precludes the extraction of any reliable information.

## TRIAL 2

A second trial on small plots of 120 sq. ft. gave the following results:—

| Treatment                                              |     |     |     | 1st cut | 2nd cut |
|--------------------------------------------------------|-----|-----|-----|---------|---------|
| 1. Control                                             | ... | ... | ... | 1,633   | 363     |
| 2. 100 kgs. Sulphate of Ammonia                        | ... | ... | ... | ...     | ...     |
| 30 kgs. Muriate of Potash                              | ... | ... | ... | 2,541   | 544     |
| 3. As treatment 2 + 50 kgs. Superphosphate             | ... | ... | ... | 1,352   | 363     |
| 4. As treatment 2 + 100 kgs. Superphosphate            | ... | ... | ... | 1,815   | 363     |
| 5. As treatment 2 + 200 kgs. Superphosphate            | ... | ... | ... | 2,178   | 544     |
| 6. As treatment 2 + 50 kgs. Sulphate of Ammonia        | ... | ... | ... | 2,178   | 907     |
| 7. As treatment 2 + 100 kgs. Sulphate of Ammonia       | ... | ... | ... | 2,541   | 726     |
| 8. Control                                             | ... | ... | ... | 544     | 544     |
| 9. As treatment 2 + 200 kgs. Sulphate of Ammonia       | ... | ... | ... | 2,178   | 1,089   |
| 10. As treatment 2 + 100 kgs. Superphosphate, 50 kgs.  | ... | ... | ... | ...     | ...     |
| Sulphate of Ammonia                                    | ... | ... | ... | 1,815   | 1,270   |
| 11. As treatment 2 + 100 kgs. Superphosphate, 100 kgs. | ... | ... | ... | ...     | ...     |
| Sulphate of Ammonia                                    | ... | ... | ... | 3,448   | 1,996   |
| 12. As treatment 2 + 100 kgs. Superphosphate, 200 kgs. | ... | ... | ... | ...     | ...     |
| Sulphate of Ammonia                                    | ... | ... | ... | 3,267   | 2,178   |

There appears to be a definite trend of increasing yields with increasing fertilizer application.

## APPENDIX IV

## SEASONAL PLANTINGS OF POTATOES AT CUREPIPE STATION

A trial was initiated to investigate the seasonality of potato growing at Curepipe.

A basic dressing of:—

- 100 kgs Sulphate of Ammonia  
307.5 kgs Superphosphate  
88.5 kgs Sulphate of Potash  
15 tons Farmyard Manure,

was applied to each planting. The variety used was King George V.



The yields were as follows:—

| Month         | Yield in<br>kgs/aces | Remarks                                                    |
|---------------|----------------------|------------------------------------------------------------|
| January ...   | Nil                  | } Failed due to continuous heavy rains.                    |
| February ...  | Nil                  |                                                            |
| March ...     | Nil                  |                                                            |
| April ...     | 1,633                | } Blight infection heavy                                   |
| May ...       | 326                  |                                                            |
| June ...      | 2,468                |                                                            |
| July ...      | 2,722                | } Blight infection fairly severe.                          |
| August ...    | 2,178                |                                                            |
| September ... | 1,149                |                                                            |
| October ...   | 1,275                | } They are growing fairly well and will be reaped in 1956. |
| November ...  |                      |                                                            |
| December ...  |                      |                                                            |

It appears that good crops can only be expected in June, July and August, due to heavy rains and at other times the high incidence of blight.

## APPENDIX V

A spacing  $\times$  fertilizer trial with stored seed, produced in 1954 and freshly imported seed.

These spacings were employed:—

- (i) 18"  $\times$  9"
- (ii) 18"  $\times$  12"
- (iii) 18"  $\times$  15"

These treatments were:—

T<sub>1</sub> — 30 tons F.Y.M.

T<sub>2</sub> — 15 tons F.Y.M.

104.5 kg. Sulphate of Ammonia

308.0 kg. Superphosphate

87.5 Sulphate of Potash

T<sub>3</sub> — 294 kg. Sulphate of Ammonia

461 kg. Superphosphate

245 kg. Muriate of potash

YIELDS RECORDED WERE AS FOLLOWS (in kg. per acre):—

| Spacing              | Stored seed    |                |                | Imported seed  |                |                |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                      | T <sub>1</sub> | T <sub>2</sub> | T <sub>3</sub> | T <sub>1</sub> | T <sub>2</sub> | T <sub>3</sub> |
| 18" $\times$ 9" ...  | 1,532          | 2,621          | 1,663          | 4,113          | 6,997          | 6,513          |
| 18" $\times$ 12" ... | 1,330          | 2,520          | 1,234          | 3,912          | 5,263          | 5,343          |
| 18" $\times$ 15" ... | 1,129          | 2,097          | 857            | 4,255          | 5,908          | 4,214          |

It is apparent that the stored seeds have yielded very badly compared to the freshly imported seed, and that the local seed has been unable to take advantage of the fertilizer dressings.

With the stored seed treatment 2 appears to be the most economical and closer spacing gives a higher yield, with the heavier fertilizer dressings.

## APPENDIX VI

A variety trial with 13 varieties of potato at Curepipe Station.

A basic dressing of F.Y.M., Sulphate of Ammonia, Superphosphate and Sulphate of Potash was given throughout.

YIELDS RECORDED WERE AS FOLLOWS (in kg. per acre).

| <i>Variety</i>               | <i>Yield in<br/>kg./acre</i> |
|------------------------------|------------------------------|
| King George F.P.B. ... ..    | 1,156                        |
| Alpha F.P.B. ... ..          | 2,193                        |
| Arran Banner F.P.B. ... ..   | 554                          |
| Majestic F.P.B. ... ..       | 939                          |
| Madagascar ... ..            | 434                          |
| Kennebec ... ..              | 2,434                        |
| Up to date F.P.B. ... ..     | 747                          |
| Leslie ... ..                | 964                          |
| King George P.E.S. ... ..    | 508                          |
| Sebago P.E.S. ... ..         | 1,282                        |
| Arran Peak F.P.B. ... ..     | 484                          |
| Kerr's Pink ... ..           | 1,282                        |
| Up to date Dannybrook ... .. | 532                          |
| Pentland ace ... ..          | 2,410                        |

Yields were very low due to the very high incidence of blight, in spite of regular fungicidal treatment.

## APPENDIX VII

A yield  $\times$  spacing trial on rice at Curepipe.

Variety—Makalioka

Spacings—(i) 6"  $\times$  6"

(ii) 9"  $\times$  9"

(iii) 12"  $\times$  12"

A uniform dressing of:—

20 tons F.Y.M. per acre

250 kg Superphosphate per acre

187.5 kg Sulphate of Ammonia per acre

75.0 kg Sulphate of Potash

was applied to all treatments.

YIELD RECORDED AS FOLLOWS (In kg per acre)

6"  $\times$  6"—1,122 kg.

9"  $\times$  9"—1,497 kg.

12"  $\times$  12"—1,404 kg.

Yields on the whole were quite good but a totally uneconomic fertilizer dressing was used.

## APPENDIX VIII

## METEOROLOGICAL DATA C.E.S. REDUIT

|           |     |     | <i>Rainfall<br/>in inches</i> |
|-----------|-----|-----|-------------------------------|
| January   | ... | ... | 5'06                          |
| February  | ... | ... | 19'07                         |
| March     | ... | ... | 18'55                         |
| April     | ... | ... | 3'02                          |
| May       | ... | ... | 4'74                          |
| June      | ... | ... | 4'42                          |
| July      | ... | ... | 2'51                          |
| August    | ... | ... | 2'42                          |
| September | ... | ... | 1'88                          |
| October   | ... | ... | 0'85                          |
| November  | ... | ... | 1'90                          |
| December  | ... | ... | 1'74                          |
| TOTAL     | ... | ... | 66'16                         |

## APPENDIX IX

To investigate the effect of various fertilizer treatments and spacings, on stored and imported seed at Central Experimental Station.

## TRIAL I

- Treatment 1.— 30 tons F.Y.M. per acre  
 2.— 15 tons F.Y.M. per acre  
     104.5 kg Sulphate of Ammonia/acre  
     308.0 kg Superphosphate per acre  
     87.5 kg Sulphate of Potash per acre  
 3.—294 kg Sulphate of Ammonia  
     461 kg Superphosphate  
     245 kg Sulphate of Potash.

Three spacings were employed:—

18" × 19"

18" × 12"

18" × 15"

Part of the trial was planted with locally produced seed and part with freshly imported seed.

Yields obtained were as follows (in kg. per acre).

| Spacing   | <i>Average seed<br/>rate per acre<br/>in kg.</i> |                 | <i>Average gross yield per acre in kg. (Field weight)</i> |                 |                      |                 |                      |                 |               |                 |
|-----------|--------------------------------------------------|-----------------|-----------------------------------------------------------|-----------------|----------------------|-----------------|----------------------|-----------------|---------------|-----------------|
|           |                                                  |                 | <i>T<sub>1</sub></i>                                      |                 | <i>T<sub>2</sub></i> |                 | <i>T<sub>3</sub></i> |                 |               |                 |
|           | <i>Stored</i>                                    | <i>Imported</i> | <i>Stored</i>                                             | <i>Imported</i> | <i>Stored</i>        | <i>Imported</i> | <i>Stored</i>        | <i>Imported</i> | <i>Stored</i> | <i>Imported</i> |
| 18" × 9"  | 725                                              | 1,220           | 3,411                                                     | 6,162           | 4,497                | 6,303           | 4,520                | 5,879           |               |                 |
| 18" × 12" | 585                                              | 1,025           | 2,926                                                     | 5,175           | 5,491                | 5,737           | 3,928                | 4,426           |               |                 |
| 18" × 15" | 445                                              | 825             | 2,242                                                     | 4,832           | 5,203                | 7,457           | 3,223                | 5,436           |               |                 |

The imported seed have again shown a marked superiority over the stored seed. The stored seed suffered much more severely from blight.

The closer spacing has given, on the whole, higher yields. There is little difference between the treatments.



## TRIAL 2

A trial was laid down to compare different methods of planting with different spacings.

A uniform dressing of fertilizer was applied being as T<sub>2</sub> in the previous trial.

Three spacings were employed with deep *v/s* shallow planting and holes *v/s* furrows.

Deep planting — 8" below ground level.

Shallow „ — 4" + earthing up.

The following yields were obtained:—

| Method and Spacing       | Gross yield in kg.<br>per acre |                     |
|--------------------------|--------------------------------|---------------------|
|                          | Deep<br>planting               | Shallow<br>planting |
| In holes 18" × 9" ...    | 3,788                          | 4,352               |
| In holes 18" × 12" ...   | 2,941                          | 2,740               |
| In holes 18" × 15" ...   | 4,191                          | 4,030               |
| In furrows 24" × 6" ...  | 2,813                          | 2,722               |
| In furrows 24" × 9" ...  | 3,085                          | 2,601               |
| In furrows 24" × 12" ... | 2,359                          | 1,452               |

The trial was subject to heavy rains and severely damaged.

Holes appear to have given better yields than furrows although this would appear to be the effect of spacing rather than that of method of planting.

## APPENDIX X

Yields obtained from plantings of several varieties of potato kept in cold storage since 1954.

|                   | Yield per acre |
|-------------------|----------------|
| King George V ... | 2,752          |
| Alpha ...         | 2,359          |
| Arran Banner ...  | 2,299          |
| Up to Date ...    | 2,299          |
| Kennebec ...      | 2,117          |
| Leslie ...        | 1,603          |
| Madagascar ...    | 1,119          |
| Pentland Ace ...  | 726            |
| Majestic ...      | 695            |

## APPENDIX XI

## METEOROLOGICAL DATA—BARKLY EXPERIMENT STATION

|               | Rainfall<br>in inches |
|---------------|-----------------------|
| January ...   | 3'69                  |
| February ...  | 13'69                 |
| March ...     | 13'46                 |
| April ...     | 2'68                  |
| May ...       | 3'66                  |
| June ...      | 2'80                  |
| July ...      | 1'48                  |
| August ...    | 1'64                  |
| September ... | '96                   |
| October ...   | '60                   |
| November ...  | 1'28                  |
| December ...  | 1'13                  |

TOTAL ... 47'07

## APPENDIX XII

## METEOROLOGICAL DATA—RICHELIEU EXPERIMENT STATION

|           |     |     | <i>Rainfall<br/>in inches</i> |
|-----------|-----|-----|-------------------------------|
| January   | ... | ... | '89                           |
| February  | ... | ... | 12'81                         |
| March     | ... | ... | 12'48                         |
| April     | ... | ... | 2'52                          |
| May       | ... | ... | 3'03                          |
| June      | ... | ... | 2'40                          |
| July      | ... | ... | '13                           |
| August    | ... | ... | 1'09                          |
| September | ... | ... | '13                           |
| October   | ... | ... | '34                           |
| November  | ... | ... | '56                           |
| December  | ... | ... | '47                           |
| TOTAL     |     |     | 35'85                         |

## APPENDIX XIII

To determine the effect of five manurial treatments on tobacco yield, grade index etc., of tobacco leaf.

Treatment  $t_1$  = 0 ton fym. per acre + 0 ton goat manure per acre.

$t_2$  = 5 tons fym. per acre.

$t_3$  = 10 tons fym. per acre.

$t_4$  = 2 tons goat manure per acre.

$t_5$  = 5 tons fym. per acre + 2 tons goat manure per acre.

Design: Randomised blocks; 4 replications; plots 14/605 acre.

(0.02314 acre) = 14 rows of 24' — Spacing 3'  $\times$  1½'.

Experimental details: all plots received a dressing of 80 kg. per acre of Dutch fertilizer 10: 28: 14 in addition to particular manurial treatment. Seed sown 23/1/55. Planted on 22-23rd February 1955. Recruited on March 3rd, 1955. Variety: Yellow Mammoth resistant.

Field Data: Plantation fair—no visible difference between treatments—incidence of disease and insect pest small.

## APPENDIX XIV

## SOIL BLOCKS VERSUS TRANSPLANTS EXPERIMENT—1955

(a) *Object*: To compare the effect of direct transplants and soil blocks on the yield grade index, etc., of tobacco.

(b) *Treatments*:  $t_1$  Transplants

$t_2$  Soil Blocks.

(c) *Design*: Randomized blocks, 3 replications, plots of 76 rows of 16 plants, spacing 3'  $\times$  1½'—plots 5472 ft<sup>2</sup> = 0.1256198 acre.

(d) *Experimental Details*: Soil blocks prepared by Goradam machine with a mixture of 7 parts F.Y.M., 3 parts sterilised soil and 2 parts sand. The plants from beds (size of leaf about ½" were pricked on the soil blocks). The tall hardened plants from the same beds were used to plant the 'transplant' plots. All plots received Dutch fertiliser 10: 28: 14 at the rate of 80 kg per acre.

No significant differences (owing to small difference). 'Soil Blocks' gave a better stand at the start (very little recruiting), growth of plants was rapid and uniform, and harvest was started and completed earlier in the 'soil blocks' plots. Yield of seed was low in the 'soil block' plants, due to a shortened cycle and absence of suckering.

## APPENDIX XV

## RESUMÉ OF TRIALS ON FURCRAEA

| <i>Planted</i> | <i>Trial No.</i> | <i>Type of Experiment</i>                                                     | <i>Soil Type</i> | <i>Remarks</i>                                                                                                                                                                                                              |
|----------------|------------------|-------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1950           | 1/50             | Spacing, mostly double rows—6' × 12' × 3' × 2'; one 5' × 5'—some with accacia | Black ...        | Poor to very poor. Plants stunted in growth—leaves reddish yellow colour and short. Accacia 5' × 5' (poor) slightly better in parts. A small part of 7/50 on red soil with accacia on both sides of the double row is good. |
| 1951           | 8/51             | Fertilizer—N, P, K, Ca                                                        | Mostly black ... | Poor, except one plot with NPK and Ca on red soil which is fair.                                                                                                                                                            |
|                | 9/51             | Costing                                                                       | Black ...        | Poor but part under partial shade.                                                                                                                                                                                          |
|                | 10/51            | Spacing to 12/51                                                              | Red ...          | Fair to poor—some wild accacia growth has good effect on aloe. Border rows and plants under shade fair to good.                                                                                                             |
|                | 13/51            | Half accacia (dense shade)                                                    | Red ...          | Plots without accacia, as above with dense accacia shade—                                                                                                                                                                   |
|                | 14/51            | half without accacia                                                          |                  | leaves green, long, unripe and few in number.                                                                                                                                                                               |
|                | 15/51            | Costing                                                                       | Black ...        | Poor.                                                                                                                                                                                                                       |
| 1952           | 16/52            | Interplanted with albizzia                                                    | Black ...        | Poor to fair—Fair near drain on rocky land under partial shade.—Albizzia deciduous.                                                                                                                                         |
|                | 17/52            | Interplanted with Gra-villea (silver oak)                                     | Black ...        | Poor to very poor. Silver oak poor growth.                                                                                                                                                                                  |
|                | 18/52            | Macadam and sand in holes                                                     | Black ...        | On rocky land—poor; fair near trench or on upper border of field.                                                                                                                                                           |
|                | 19/52            | Clean weeding, partial weeding, no weeding                                    | Black ...        | Poor to very poor. Clean weeding slightly less poor than no weeding.                                                                                                                                                        |
|                | 20/52            | On steep slope                                                                | Black ...        | Poor, fair in part under partial shade.                                                                                                                                                                                     |
|                | 21/52            | Soil burnt, soil unburnt                                                      | Black ...        | Poor to fair, few plants good Drain between double rows in 1955—seems to have slight beneficial effect.                                                                                                                     |
|                | 22/52            | Part with accacia, part without                                               | Black ...        | A small plot in field on east side of railway line; poor                                                                                                                                                                    |
|                | 23/53            | Interplanted with manioc                                                      | Reddish ...      | Fair in parts—aloe malgache doing better than aloe creole.                                                                                                                                                                  |
|                | 24/53            | With and without accacia                                                      | Red (RES) ...    | Start good.                                                                                                                                                                                                                 |



## APPENDIX XVI

It was decided that a comprehensive trial on potatoes was essential in order to investigate the requirements of individual nutrients.

*Treatments:—*

|                                           |                                    |
|-------------------------------------------|------------------------------------|
| F.Y.M $f_0 = 0$ ton fym. per acre         | Nitrogen $n_0 = 0$ kg. N/acre      |
| do. $f_1 = 15$ tons / acre                | do. $n_1 = 15$ do.                 |
| do. $f_2 = 30$ tons / acre                | do. $n_2 = 30$ do.                 |
| Phosphate— $p_0 = 0$ kg. $P_{205}$ p/acre | Potash— $k_0 = 0$ kg. $K_2O$ /acre |
| do. $p_1 = 20$ do.                        | do. $k_1 = 30$ do.                 |
| do. $p_2 = 40$ do.                        | do. $k_2 = 60$ do.                 |

Sulphate of Ammonia 20 per cent N; superphosphate 18 per cent  $P_{205}$ , sulphate of potash 48 per cent  $K_2O$ .

Design: Compounded block (Tech. Book No 35 Yates; p. 48 table 49, set 1).

*Experimental Data:* Planted in furrows 28" apart and ridged immediately afterwards. Farmyard manure and artificials at bottom of furrow before planting. Plots of 8 rows of 39' length, the 6 central rows harvested for experimental purposes. Nine blocks of 9 plots separated by irrigation canals for watering the plots. Watered with rainer up to germination, then flood irrigation in the furrows between ridges. Spraying with Soltosan carried at fortnight intervals as from three weeks after planting at the rate of 2 lbs Soltosan per acre each time.

*Variety:* King George seed from South Africa imported July, 1955.

*Experiment planted* 16—18/8/55

*harvested* 14—16/11/55

*Diseases and Pests:* All leaf roll infected plants were rogued out 3–4 weeks after planting. Plantation free from pests and other diseases up to harvest time.

## APPENDIX XVII

## POTATO—SPACING/FERTILIZER EXPERIMENT—P.E.S.

To find the effects of 12 treatments on the yield of potatoes.

*Treatments:—*

|                             |     |           |                    |          |          |
|-----------------------------|-----|-----------|--------------------|----------|----------|
| Spacings                    |     | $S_1$ ... | $18'' \times 9''$  |          |          |
|                             |     | $S_2$ ... | $18'' \times 12''$ |          |          |
|                             |     | $S_3$ ... | $18'' \times 15''$ |          |          |
| Fertilizers                 |     |           | <i>A</i>           | <i>B</i> | <i>C</i> |
| F.Y.M. tons/Acre            | ... | ...       | 30                 | 15       | 0        |
| Sulphate of Ammonia—ks/Acre | ... | ...       | —                  | 104.5    | 294      |
| Superphosphate—ks/Acre      | ... | ...       | —                  | 308      | 461      |
| Sulphate of Potash—ks/Acre  | ... | ...       | —                  | 87.5     | 245      |
| Total Artificials           |     |           | ...                | 500.0    | 1,000    |

*Design:* Randomised blocks; 2 replications; plots 5 beds of  $36' \times 6'$ .

*History of Land:* The experiment was planted in fields Nos 3 and 4 (0.78 acres) at Pamplémousses Experiment Station. The fields had been under sugar cane up to 1953. The last crop of canes was in 1953. The experiment for the control of weeds in canes by herbicides (E. Rochecouste) was planted in these fields in February, 1954. A potato spacing fertilizer experiment was planted

in June–September, 1954, followed by groundnuts' trial (variety, spacing, number of seeds) in December. The potato experiment was planted on 21.5.1955.

*Seed:* Fresh, imported from South Africa, King George variety—Certified A.A. seed.

*Method of Planting:* Land prepared with the 'pioche'—The sets were dipped in 1 per cent Aretan solution immediately after cutting. Planted in holes.

*Field Notes:* The plantation was watered by hand with watering cans. Bacterial wilt was present throughout the experiment. Blight started early but was kept under control by regular applications of Soltosan spray—All leaf roll plants were rogued.

The experiment was harvested on 18.8.1955. Samples from each plot were passed through sieves ( $1\frac{1}{4}$ " and 2" mesh), the number and weight of each grade was recorded.

Tons per Acre  $\pm$  0.78

|                 |     | $S_1$ | $S_2$ | $S_3$ | Mean $\pm$ 0.45 |
|-----------------|-----|-------|-------|-------|-----------------|
| A               | ... | 6.70  | 4.98  | 5.04  | 5.57            |
| B               | ... | 7.89  | 5.04  | 6.55  | 6.49            |
| C               | ... | 6.33  | 6.05  | 5.14  | 5.84            |
| Mean $\pm$ 0.45 |     | 6.97  | 5.36  | 5.58  | 5.97 $\pm$ 0.26 |

Conclusion:  $S_1$  better than  $S_2$  and  $S_3$

$S_2$  not better than  $S_3$

No significant difference between fertilizer treatments.

## APPENDIX XVIII

### (a) MAIZE SPACING/FERTILIZER EXPERIMENT—R.E.S.

*Object:* To find the effect of 12 treatments—the combinations of 3 spacings with 4 fertilizer applications—on the yield of local maize.

*Treatments:* Spacings:  $S_1 = 3' \times 1'$   
 $S_2 = 3' \times 1\frac{1}{2}'$   
 $S_3 = 3' \times 2'$

*Fertilizer Treatments:*  $F_1 = \text{Control}$   
 $F_2 = 250 \text{ ks of the fertiliser formula 3-18-9}$   
 $F_3 = 2 \text{ tons of f.y.m. per acre}$   
 $F_4 = 2 \text{ tons f.y.m. per acre} + 200 \text{ ks phosphatic guano.}$

*Design:* Randomised blocks; 4 replications; plots 1/40 acre.

*Date of Planting:* March 28th, 1955.

*Field History:* Under cane 1949–53; tobacco 1954, then fallow.

*Preparation of Land and Planting:* The area was tilled and furrowed by the Ferguson tractor. The maize was planted in the furrows and the plants were earthed up later.

The plantation was watered with the Sigmund overhead irrigation equipment at the beginning and furrow irrigation was carried out later.

*Harvest:* The experiment was harvested on the 16/9/1955. The cobs were dry. The weight of cobs was taken for each plot. The weight of dry grain per cent cob was found later to be about 60 per cent. Yield figures of grain in the following table were calculated on this basis from the weight of the cobs in each plot.

| Yield metric tons grains/acre $\pm 0.11$ |             |       |       |       |       |                  |
|------------------------------------------|-------------|-------|-------|-------|-------|------------------|
|                                          |             | $F_1$ | $F_2$ | $F_3$ | $F_4$ | Mean $\pm 0.055$ |
| $S_1$                                    | ...         | 1.61  | 1.65  | 1.63  | 1.67  | 1.64             |
| $S_2$                                    | ...         | 1.72  | 1.51  | 1.49  | 1.72  | 1.61             |
| $S_3$                                    | ...         | 1.39  | 1.63  | 1.55  | 1.44  | 1.50             |
| Mean                                     | $\pm 0.064$ | 1.57  | 1.60  | 1.56  | 1.61  | 1.58 $\pm 0.032$ |

#### YIELD METRIC TONS GRAIN/ACRE $\pm 0.11$

There were no significant differences between treatments.

(b) MAIZE SPACING/FERTILIZER EXPERIMENT, R.E.S.

Date of planting: 14.5.55

Date harvested: 26.10.55

Field previously occupied by pumpkin.

Area of 1 plot =  $24' \times 24' = 8/605$  acre.

Yields calculated from actual weight of grain from each plot.

| YIELDS—METRIC TONS PER ACRE— $\pm 125$ |            |       |       |       |       |                 |
|----------------------------------------|------------|-------|-------|-------|-------|-----------------|
| Manurial treatment                     |            | $f_1$ | $f_2$ | $f_3$ | $f_4$ | Mean $\pm 62.6$ |
| Spacing                                |            |       |       |       |       |                 |
| S <sub>1</sub>                         | ...        | 618   | 454   | 1,160 | 592   | 706             |
| S <sub>2</sub>                         | ...        | 731   | 870   | 1,651 | 706   | 990             |
| S <sub>3</sub>                         | ...        | 609   | 963   | 1,412 | 731   | 945             |
| Mean                                   | $\pm 72.3$ | 664   | 773   | 1,408 | 676   | 880             |

Results:  $F_3$  significantly better than  $f_1$ ,  $f_2$  and  $f_4$ .

$S_2$ ,  $S_3$  significantly better than  $S_1$ .

## APPENDIX XIX

### YAM COLLECTION AT PAMPLEMOUSSES EXPERIMENT STATION

Planted 30/11/54, harvested 25/7/55 on ridges, spacing  $4' \times 1\frac{1}{2}'$  F.Y.M.  
5 tons per acre, wood ashes  $\frac{1}{2}$  ton per acre.

| Variety            | Yield<br>kg/acre |
|--------------------|------------------|
| Sealed top         | 7,714            |
| Lisbon             | 8,016            |
| Oriental           | 6,050            |
| Crops              | 6,655            |
| Bottle Neck Lisbon | 7,562            |
| Light Red          | 9,957            |
| Kapata Kondol      | 6,806            |
| Horn               | 10,890           |
| Cambarre Riz       | 5,482            |
| Hendeni 4          | 9,831            |
| Danish             | 7,562            |
| Hendeni 1          | 9,831            |
| Cush               | 6,050            |
| Angiliala          | 9,831            |
| Cush-Cush          | 8,570            |
| Fugue              | 9,075            |
| Cambarre Betty     | 10,187           |



## APPENDIX XX

## YIELD OF FODDER GRASSES, PAMPLEMOUSSES EXPERIMENT STATION

Planted 2/2/54. On beds 34' × 6' = 204 ft.<sup>2</sup> = 1 plot.

Yields in metric tons/acre

|                          | O    | N    | NP    | NPK   |
|--------------------------|------|------|-------|-------|
| Elephant grass ...       | 64.5 | 82.6 | 127.5 | 129.6 |
| Setaria Bua River ...    | 30.3 | 31.6 | 32.2  | 32.2  |
| Setaria Kazungula ...    | 18.8 | 19.6 | 20.7  | 21.6  |
| Chloris gayana ...       | 20.0 | 21.9 | 21.9  | 23.7  |
| Paspalum paniculatum ... | 13.8 | 14.2 | 14.9  | 15.5  |
| Kikuyu ...               | 8.3  | 10.4 | 6.8   | 8.4   |
| Panicum sp. ...          | 23.6 | 16.3 | 20.0  | 28.8  |
| Panicum maximum ...      | 11.9 | 15.7 | 19.6  | 27.1  |
| Melinis ...              | 22.2 | 18.3 | 22.1  | 23.1  |
| Panicum makarikari ...   | 24.9 | 26.2 | 30.3  | 31.4  |
| Australian paspalum ...  | 11.1 | 13.9 | 16.8  | 16.8  |
| Paspalum notatum ...     | 11.5 | 16.2 | 16.8  | 16.5  |

## APPENDIX XXI

Results of Acacia trials at Richelieu Experiment Station and Pamplemousses Experiment Station.

## 1. Richelieu Experiment Station.

(a) Field planted 27.2.54, germination 6.3.54.

(b) Spacing: In shallow drills 1' apart, with 2' between groups of 4 drills.

(c) Area of field: 39 beds of 4 rows, each 260' long = 60,840 ft.<sup>2</sup> = 1.40 acres.

(d) Cultivation: 2 weedings at the start.

(e) Irrigation: one flood irrigation in dry season 1954, one flood irrigation end August, 1955, difficult parts completed with rainer.

(f) Harvest: at 18" from the ground.

|                                                   |     |     |     |        |
|---------------------------------------------------|-----|-----|-----|--------|
| 1st cut 15.3.55 with sickle ...                   | ... | ... | ... | kg.    |
| 2nd cut 26.4.55 with sickle ...                   | ... | ... | ... | 3,964  |
| 3rd cut 20.8.55 with raised mower or Ferguson ... | ... | ... | ... | 3,030  |
| 4th cut 3.12.55 with raised mower or Ferguson ... | ... | ... | ... | 2,500  |
|                                                   |     |     |     | 2,923  |
|                                                   |     |     |     | 12,417 |

(g) Yield per acre—8.89 tons for 1955.

## 2.—(a) Application of N, P fertilizers to the above field.

(b) 32 beds starting from 5th bed south side of field divided into 8 plots of 4 beds—Area of 1 plot = 4 × 4' × 260' = 0.955 acre.

(c) Treatments: 4 as follows: replicates 2.

|                    | Sulphate of Ammonia | Superphosphate |
|--------------------|---------------------|----------------|
| t <sub>1</sub> ... | 0                   | 0              |
| t <sub>2</sub> ... | 100 kg/acre         | 0              |
| t <sub>3</sub> ... | 0                   | 100 kg/acre    |
| t <sub>4</sub> ... | 100 kg/acre         | 100 kg/acre    |

(d) Yield metric tons/acre ± 0.46.

| t <sub>1</sub> | t <sub>2</sub> | t <sub>3</sub> | t <sub>4</sub> | Mean        |
|----------------|----------------|----------------|----------------|-------------|
| 3.32           | 3.31           | 3.01           | 3.76           | 3.35 ± 0.23 |

No significant difference between treatments.

3. *Acacia* plot at Pamplémousses Experiment Station.

Planted 14.7.50

Area 26' × 78' = 2028 ft<sup>2</sup>.

26 rows of 78' at 1' distance between rows, spacing 1' × 1'.

## HARVESTED IN 1955

January, March, May, July, October, December = 1672.5 kg.

Yield 1955 = 1672.5 × 43560 tons per acre

|      |      |
|------|------|
| 2028 | 1000 |
|------|------|

= 35.924 metric tons per acre.

4. *Acacia*, Molasses, silage.

|                 | Date       | Wt. <i>Acacia</i><br>kg | Molasses<br>% <i>Acacia</i> | Wt. kg |
|-----------------|------------|-------------------------|-----------------------------|--------|
| 1st filling ... | 16-19.3.55 | 6,900                   | 2%                          | 138    |
| 2nd filling ... | 25-28.4.55 | 5,450                   | 6%                          | 330    |

After each ton of acacia in silo, the diluted molasses was watered on.

1st filling—20 kg. molasses diluted with 60 kg. water } per ton of

2nd filling—60 kg. molasses diluted with 60 kg. water } *acacia*.

## APPENDIX XXII

## DETAILS OF ALLOTMENTS FOR 1955

- Total amount of rent collected during the year—Rs 202.
- The following are available as per list hereunder:—

|                           | No. of<br>Allottees | No. of<br>Huts | No. of<br>acres |
|---------------------------|---------------------|----------------|-----------------|
| Curepipe ..               | 32                  | 32             | 35†             |
| Malherbes ...             | 18                  | 18             | 18              |
| Barkly Eastern ...        | 27                  | 27             | 27              |
| Barkly Western ...        | 31                  | 30             | 31              |
| Richelieu ...             | 26                  | 26             | 26              |
| Elysee ...                | 26                  | —              | 26              |
| Bois Marchand Eastern ... | 20                  | —              | 20              |
| Bois Marchand Western ... | 14                  | —              | 14              |
| Moona ...                 | 6                   | 6              | 12‡             |
|                           | 200                 | 139            | 209             |

The Committee met regularly once a month during the year.

- |                                                          |    |
|----------------------------------------------------------|----|
| 3. Number of applicants applied for land during the year | 67 |
| 4. Number of applicants interviewed during the year      | 54 |

5. The remainder did not turn up.

Out of 54 interviewed, 4 not eligible, remainder placed on waiting list.

- |                            |    |
|----------------------------|----|
| 6. Number of new allottees | 16 |
| 7. Number evicted          | 9  |
| 8. Number resigned         | 4  |
9. Timber and straw have been given to allottees to repair their huts as follows:—

|               | Allot-<br>tees |
|---------------|----------------|
| Curepipe ...  | 28             |
| Malherbes ... | 18             |
| Barkly ...    | 24             |
| Richelieu ... | 18             |

† Out of 35 acres only 32 acres are occupied (1 plot still under bush, 1 plot abandoned and the third cultivated with vetiver).

‡ 2 acres per plot for each allottee.

## Extension Services

### Staff

1. The Senior Agricultural Officer in charge Extension Services returned from a three months' mission to Rodrigues on the 21st February. Messrs. J. Marot and B. N. Roy were promoted Agricultural Officers, Mr. M. Sooltangos was appointed in a similar capacity on a temporary basis. Four new Assistant Agricultural Officers were due to be appointed at the end of 1955. Mr. Marot was absent on overseas and local sick leave from May to December.

2. When completely established the Extension Service will cover the whole Island, with an Agricultural Officer and an Assistant Agricultural Officer for every two districts. The Service was formed after the Senior Agricultural Officer (Extension) had returned from Rodrigues when the demonstration branch of the late Sugarcane Research Station, and the field branch of the former Food Production Board were merged with the small extension branch of the Agricultural Division to form the re-organised Extension Services of the Division. The Service is also responsible for the supervision of land settlement schemes and of school gardens.

### School Gardens

3. School gardens were created in Mauritius in 1921 and until December, 1947, were run by the Department of Agriculture. In 1948 the Education Department assumed entire responsibility for this work. With the reorganisation of the Agricultural Division, the Department of Agriculture has agreed to resume responsibility for school gardens which are being integrated in the general extension scheme.

4. It is proposed also to pay particular attention to the Teachers' Training College so that a sound agricultural grounding is given to the future teachers who would eventually be able to relieve the pressure on the district extension staff.

### Demonstration work

5.—(a) *Permanent demonstration plots*.—Every district will eventually have at least one permanent demonstration plot for the benefit of the farmers of the locality. At present only two such plots exist: one at Arsenal, which is run conjointly with the Village Council, and the other at Vacoas, which is run in collaboration with the Ramakrishna Mission. These two plots have grown a variety of crops with the following results:—

| Crops grown                      | Vacoas                      |                 | Arsenal                     |                 |
|----------------------------------|-----------------------------|-----------------|-----------------------------|-----------------|
|                                  | Crop produced (metric tons) | Tons per arpent | Crop produced (metric tons) | Tons per arpent |
| Potatoes ... ..                  | 5,985                       | 6,431           | 3,143                       | 3,108*          |
| Groundnuts ... ..                | 948                         | 1,370           | 515                         | 1,200           |
| Pistache malgache ... ..         | 949                         | 4,745           | —                           | —               |
| Beans and cow peas ... ..        | 1,226                       | 2,486           | 5,185                       | 3,869           |
| Cabbages, Chinese ... ..         | 13,525                      | 12,454          | —                           | —               |
| Cabbages and cauliflowers ... .. |                             |                 | —                           | —               |
| Vegetable marrow ... ..          | 1,376                       | 6,884           | —                           | —               |
| Tomatoes ... ..                  | —                           | —               | 615                         | 3,257*          |
| Onions ... ..                    | —                           | —               | 5,303                       | 6,239           |
| Miscellaneous vegetables ... ..  | 900                         | —               | —                           | —               |

The total value of the crops produced at Vacoas was Rs 7,765.19 at Arsenal Rs 7,792.70. The gross return per arpent totals up to Rs 3,093.

\*Low yield due to Bacterial wilt.



7.—(b) *Demonstration plots on farmers' land.*—55 fertiliser demonstration plots were conducted on foodcrops and vegetables; 33 of these were reaped, 11 were discarded and the remaining 11 are still in progress. The following results were recorded:—

|                    | No. of plots laid | No. of plots harvested | No. of plots discarded | No. of plots still in progress | Average yield per arpent |                 | Difference between treatment and control per arpent |
|--------------------|-------------------|------------------------|------------------------|--------------------------------|--------------------------|-----------------|-----------------------------------------------------|
|                    |                   |                        |                        |                                | Treatment<br>Kgs.        | Control<br>Kgs. |                                                     |
| Irish potatoes ... | 17                | 12                     | 5                      | —                              | 6,050                    | 5,450           | 600+                                                |
| Ground nuts ...    | 13                | 4                      | 2                      | 7                              | 1,910                    | 1,406           | 504+                                                |
| Tomatoes ...       | 15                | 10                     | 2                      | 3                              | 3,439                    | 2,169           | 1,270+                                              |
| Onions ...         | 5                 | 5                      | —                      | —                              | 5,320                    | 4,603           | 717+                                                |
| Cabbage ...        | 2                 | 1                      | 1                      | —                              | 12,000                   | 9,750           | 2,250+                                              |
| Arouilles ...      | 1                 | —                      | —                      | 1                              | —                        | —               | —                                                   |
| Beans ...          | 1                 | —                      | 1                      | —                              | —                        | —               | —                                                   |
| Cassava ...        | 1                 | 1                      | —                      | —                              | 5,615                    | 4,615           | 1,000+                                              |
| TOTAL ...          | 55                | 33                     | 11                     | 11                             |                          |                 |                                                     |

8. The composition of the fertiliser used is equivalent to a 9N: 6P<sub>2</sub>O<sub>5</sub>: 8K<sub>2</sub>O mixture at the rate of 325 kg per acre, of which the phosphate and potash are applied deep immediately before planting, the nitrogen as a top dressing when the root system is in process of establishment, i.e., 10 days to 3 weeks after planting, according to the type of crop. With leguminous crops a 4: 9: 11 mixture is applied at the rate of 225 kg per acre, the PK and N elements being applied separately as already mentioned.

9.—(c) *Demonstration plots with sugarcane.*—Extension work with sugarcane is shared between the Mauritius Sugar Industry Research Institute and the Department of Agriculture, the former taking charge of plantations above 100 acres in area, the latter of planters cultivating anything from a fraction of an acre to just under 100 acres. These number approximately 20,000.

10. Nineteen demonstration plots on the use of complete fertilizers as against the farmers' common practice of using nitrogenous fertilizers almost exclusively were under observation during the year. Eleven of these were reaped giving average yields per arpent as follows:—

Complete fertilizers: 32.7 tons of cane per arpent

Control: 28.7 tons per arpent.

The complete fertilizer mixture recommended for plant canes is:—

- |                            |                     |                                |
|----------------------------|---------------------|--------------------------------|
| A. Phosphatic guano ...    | 400 kgs. per arpent | } deep application at planting |
| Muriate of potash ...      | 100 kgs. per arpent |                                |
| B. Sulphate of ammonia ... | 100 kgs. per arpent | } 3 to 5 months after planting |
| Nitrate of soda ...        | 50 kgs. per arpent  |                                |

For ratoons: 100 kg sulphate of ammonia + 50 kg nitrate of soda + 100 kgs muriate of potash.

11. In addition to demonstration plots for methods of cultivation, eight propagation plots planted in 1954 were reaped for the purpose of providing planting material of recommended varieties to small sugarcane growers. Some 24,000 canes of the three Barbados varieties released in 1953 (B.3337, B.37161 and B.37171) were distributed on sale to farmers through the care of the Extension Service.

12. Close contact was maintained with the Sugar Industry Research Institute whose cooperation and advice are gratefully acknowledged.

### Foliar Diagnosis

13. Owing to the dry weather that prevailed at the beginning of 1955, the collection of sugarcane leaf samples for foliar diagnosis started only in March to end in April. As a result of the limited time thus available, the collection of samples centred mainly on cases of suspected nutritional deficiencies as indicated by previous yield records, on fields due to be replanted and on special requests from farmers. 155 samples were collected and analysed for P and K only which are usually found deficient on small growers' lands. Shortage of staff also militated against more samples being taken this year, but it is expected that all vacancies will be filled early in the New Year.

### Agricultural Meetings

14. Farmers' meetings were held in various centres. The varied aspects of cane, foodcrop and vegetable cultivation were discussed and practical advice given. In the course of these meetings the results of demonstration work are brought forward in support of the advice given. Growers are encouraged to join in the discussions which are an essential part of such meetings. The main topics of discussion have been given:—

- (i) the rational use of fertilizers;
- (ii) the selection and use of good quality planting material;
- (iii) the improvement of cultural methods and varieties;
- (iv) the protection of crops against pests and diseases.

As a rule these meetings are held during the sugar intercrop season from January to July when the growers are able to attend them. Sixty-nine such meetings were held during the year.

15. Colour transparencies showing the various stages of crops grown in Mauritius have been made. These are projected in the course of the lectures given. Keen interest was shown by all members of the public attending these lectures and an effort is now being made to widen the range of crops in the collection. When the collections of transparencies are completed for each crop, film strips will be made from them for display in a larger number of villages and in schools.

### Pest and Disease Control

16. Some 6,750 plantations were visited and advice given to the farmers in the field. Particular stress was laid on the means of control of pests and diseases which in the tropics are the major cause of crop failure. Numerous demonstrations have been carried out on the use of fungicides and insecticides. Spraying technique is shown to planters almost as a daily routine. Often the farmers, especially the very small ones, are helped with loans of sprayers for limited periods in an effort to encourage them to buy their own spraying equipment either alone or on a co-operative basis. Many a planter now possesses his own and when not in use the equipment is hired by others. A commendable initiative has been taken by the District Council of Pamplemousses and Rivière du Rempart in purchasing a couple of sprayers for hire to farmers of the locality. It would be of great assistance to the farmers of other localities if the same initiative could be adopted elsewhere. It is gratifying to observe that pest and disease control measures are being adopted by an increasing number of farmers, nearly 700 apents have been

treated in the course of the year. This area is made up of: 250 arpents of potatoes treated against late blight, 350 arpents of tomatoes against mites, late blight and fruit borers, and 100 arpents of various crops treated against thrips, aphids, and miscellaneous pests and diseases.

17. The increased application of fungicides and insecticides among the small farmers is giving rise to quite an important retail trade in patent products over which the Extension Service will keep careful watch. To avoid possible disappointing results, farmers are advised to purchase the materials they need in sealed containers direct from the Agents or from merchants well known to them or through their Co-operative Societies.

18. Specimens of plants attacked by various pests and diseases were forwarded to the Entomologist and Plant Pathologist for identification and advice.

### Refresher Courses

19.—(a) A short refresher course on nursery practices for the Extension Staff was given by the Horticulturist at Barkly Experiment Station. Officers of the Tobacco Industry also attended.

(b) Educational visits to the Mauritius Sugar Industry Research Institute Experimental Stations were also organised under the supervision of the Chief Agriculturist of the Institute.

### Press and Radio Information Service

20. The services of the Extension Branch are available to any member of the general public, but as Extension Officers are stationed in the rural areas the farming community is quite naturally the chief beneficiary. It was, however, felt that the urban communities, and especially the intellectual and artisan classes of the population, could also derive some benefit from the Extension Service. Farmers are contacted individually day by day in the fields and in groups at agricultural meetings, but artisans and intellectuals are almost never met except following special requests. To meet their needs a press and radio information service was started in September. A monthly communique is now published in the press under the heading *Le Mois Agricole* at the beginning of each month. The major crops growing at that time of the year are listed and details of cultivation given, as well as the type and amount of fertilizers and manure that should be used and the means of controlling the pests and diseases attacking these crops. While they are published by the Extension Service, these monthly notes are written in collaboration with all the specialists of the Department. This publication should ultimately constitute a useful gardening calendar. On parallel lines monthly talks are also broadcast regularly. These talks cover as wide a range as possible of the general agricultural activity of the Colony. The cooperation of the officers of the Department of Agriculture and of the Mauritius Sugar Industry Research Institute has been secured. Radio interviews are also arranged when special agricultural topics are discussed. It is difficult to ascertain with accuracy how far these new activities meet with public appreciation, but their main purpose is to break down the indifference of the urban population in Mauritius generally to gardening and to provide the few already interested persons with a minimum of the basic knowledge which is essential for success.



### Miscellaneous activities

21. *Vegetable Clubs*.—The possibility of starting a number of vegetable clubs over the island has been considered but has not yet been implemented owing to pressure of work and shortage of staff.

22. *Assessment of rental value of Crown Lands*.—The Extension Service has been called upon on several occasions to assess the rental value of Crown Lands leased for agricultural purposes and that work is now undertaken as a regular feature of extension work.

23. *Damage to crops by weedicides*.—A number of cases of crop damage caused by the application of herbicides to neighbouring sugarcane crops have been investigated.

24. The Senior Agricultural Officer i/c Extension has served as Chairman of the Sugar Planters Rehabilitation Fund Committee and as a Member of the Irrigation Committee, the Mauritius Sugar Industry Research Institute Advisory Board and the Land Settlement Advisory Committee.

### Statistical Data

25. *Acreage and quantity and yield of food crops*.—Table I gives the area of food crops harvested during the year together with the figures for the preceding year. These figures do not represent the area of land actually under foodcrops as in certain localities the same land bears two and sometimes three crops during the year. The acreage includes the area of food crops grown on interlines of young sugarcane plantations. The reduction in the acreage of foodcrops as compared with 1954 is due to the extension of cane cultivation.

TABLE I  
NET ACREAGE OF FOODCROPS HARVESTED IN ARPENTS

| Year     | Maize | Manioc | Arouilles | Sweet Potatoes | Ground Nuts | Irish potatoes | Rice | Total |
|----------|-------|--------|-----------|----------------|-------------|----------------|------|-------|
| 1954 ... | 4533  | 732    | 522       | 439            | 904         | 1061           | —    | 8191  |
| 1955 ... | 3345  | 504    | 108       | 259            | 546         | 785            | 37   | 5584  |

The marked drop in the area harvested under potatoes is due to the failure of many potato plantations early in the season, caused by a widespread attack of blight. Adverse rainy conditions and a temporary shortage of fungicidal substances on the market resulted in considerable damage.

TABLE II  
TOTAL FOODSTUFF PRODUCED IN 1955 IN METRIC TONS

| Year     | Maize | Manioc | Arouilles | Sweet Potatoes | Ground Nuts | Irish potatoes | Rice | Total  |
|----------|-------|--------|-----------|----------------|-------------|----------------|------|--------|
| 1954 ... | 3054  | 2933   | 1907      | 1671           | 1037        | 6772           | —    | 17,374 |
| 1955 ... | 2050  | 2300   | 392       | 838            | 605         | 3178           | 32   | 9395   |

TABLE III  
AVERAGE YIELD IN KILOS PER ARPENT

| Year     | Maize | Manioc | Arouilles | Sweet Potatoes | Ground Nuts | Irish Potatoes | Rice  |
|----------|-------|--------|-----------|----------------|-------------|----------------|-------|
| 1954 ... | 0.674 | 4.007  | 3.651     | 3.807          | 1.147       | 6.383          | —     |
| 1955 ... | 0.613 | 4.563  | 3.629     | 3.235          | 1.108       | 4.048          | 0.865 |

### Market Prices

26. Tables IV and V give the average prices of certain foodcrops and vegetables in the rural and township markets. These tables show that apart from onions and potatoes, the figures are more or less the same. Favourable

climatic conditions led to a bumper crop of onions with a consequent reduction on the price; whilst the relatively high cost of seed potatoes and the unfavourable conditions in the winter months which led to a reduced yield brought about an increase in the market value of the potato crop.

### Land Settlement

#### LAND SETTLEMENT ADVISORY COMMITTEE

27. A Committee to advise on the administration of the Land Settlement Schemes was appointed in March under the aegis of the Board of Agriculture, Fisheries and Natural Resources. It was composed of the following members:

The Senior Deputy Director of Agriculture—*Chairman*.

The Honourable V. Ringadoo, M.L.C.

The Honourable A. M. Osman, O.B.E., M.L.C.

The Civil Commissioners.

The Senior Agricultural Officer i/c Extension Services.

The Committee held ten meetings during the year and examined the condition of the houses on the Settlements as well as various matters pertaining to conditions of tenure and selection of settlers.

#### PETIT SABLE SCHEME

28. The main activity on this settlement has been an attempt to protect the land from erosion. Some 12 acres have been contour-bunded, at a vertical interval of 12 ft. The bunds have sustained very heavy rainfalls and have not only stood up well but have protected the area from further erosion which formerly constituted a real menace to that land. The average steepness of the treated area is a slope of approximately 20 per cent. 550 ft. of wall have been necessary at a cost of Rs 350. The foot of the walls is protected by means of rows of dwarf bamboo which has excellent holding qualities.

29. As the Petit Sable area is densely populated, the possibility of safely releasing more of the available steeper slopes for cultivation was investigated. A portion of scrub land of an average steepness of 25 per cent and of an extent of approximately seven arpents was worked mechanically by means of a heavy tractor equipped with a rock rake. After roughly clearing the scrub by hand, contours were drawn at 12 ft. vertical intervals and a tractor was put on to build up stone walls among them. This was not always easy owing to difficulties in manoeuvring the heavy equipment over the narrow land strip between the contour lines. The method was abandoned in favour of piling the stones along contours at 24 feet vertical intervals. This proved inconvenient for row crops unless contouring is finished off by hand and an intermediate stone wall is erected between the mechanically built ones. As an alternative, and since the Land Settlement regulations provide for the growing of 50 per cent sugarcane and 50 per cent foodcrops, it is considered that the alternate growing of foodcrop and sugarcane over the area bunded at 24 feet vertical intervals would be safe enough protection against erosion.

30. The above area thus cleared and protected has been divided into five lots of various sizes according to their natural boundaries and will shortly be leased as an experimental extension of the settlement. A new road has been built to serve it.

31. The cost of the whole work including clearing, tilling and walling amounted to Rs 400 per arpent. The condition of the newly cleared area will be closely watched and, if found satisfactory, some 50 arpents of similar land could be brought under cultivation.

32. The crops grown during the year on the Petit Sable Settlement were quite satisfactory and profitable returns were obtained.

#### RICHELIEU

33. Irrigation water has been available on this Settlement since the beginning of the scheme, but storage is inadequate and distribution by earthen channels results in much loss of water. Plans were drawn for a more efficient water distribution system and works, it is hoped, will shortly be initiated. A road of 1,650 feet in length was built at a cost of Rs 6,930.

34. On the whole, the land was well cultivated and put to its best use and returns were good, but tenants did not take full advantage of the huts provided for which they have to pay rent. Only one out of 10 tenants of equipped holdings resides on the spot. The others, on the pretext that the houses are not satisfactory, reside in the nearby townships.

#### TERRE ROUGE

35. Road construction was among the major works performed during the year. Only eight of the twenty resident tenants have come to live on the Settlement. The others intend so to do when irrigation water becomes available. This has been actively attended to and the lay out of the channel tracks, the site of the reservoirs and working plans have been prepared, an additional surveyor being employed to activate the preliminary work. The main irrigation channel constructed by the Public Works Department has been completed. Sugarcane, groundnuts, tomato and cassava were the main crops grown. Owing to the dry climatic conditions, yields, as a rule, were low, especially sugarcane which yielded only 18 tons per arpent.

#### PALMAR

36. At Palmar all holdings are in occupation. The tenants have offered to purchase the huts provided so as to be able to improve these to suit their individual needs. This proposal has been referred to the Land Settlement Advisory Committee.

Meanwhile, a reduction in rent has been approved by the Government. Instead of paying Rs 690 per annum for an equipped holding, only Rs 476 will be claimed. The rent of the bare land holdings has also been reduced from Rs 60 to Rs 32.50 per arpent per annum. One tenant has been authorised to build a house of his own on his plot. This practice is encouraged whenever possible.

37. One small trial plot of sugarcane has been planted. If successful, the other tenants will follow suit, although the generally dry conditions in that region are not suitable for sugarcane. Owing to drought which prevailed during the second half of the year, crop yields have been generally disappointing.

A. D'EMMERZ DE CHARMOY,  
*Senior Agricultural Officer (Extn.).*





TABLE V. AVERAGE MONTHLY PRICES OF LOCAL COMMODITIES IN RURAL MARKETS

| Foodstuff        | Unit | Jan.   |        | Feb.   |        | March  |        | April  |        | May    |        | June   |        | July   |        | August |        | Sept.  |        | Oct.   |        | Nov.   |        | Dec.   |        | Average 1954 |        | Average 1955 |  |
|------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|--------|--------------|--|
|                  |      | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c. | Rs. c.       | Rs. c. | Rs. c.       |  |
| Rice             | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Maize            | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Pomme d'Amour    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Green Peas       | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Haricot Verts    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Arouilles (V)    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Arouilles (C)    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Sweet Potatoes   | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Manioc           | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Potatoes (local) | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Carrots          | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Onion (dried)    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Onion (fresh)    | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Arrow root       | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Cabbages         | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| Cauliflowers     | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| G. Nuts (fresh)  | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |
| G. Nuts (dried)  | ...  | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...    | ...          | ...    | ...          |  |

## College of Agriculture

### College Advisory Board

The Board was constituted as follows for the year 1955:—

The Director of Agriculture (Chairman)

The Principal, College of Agriculture (Vice-Chairman)

The Liaison Officer for Agriculture

Mr. L. Baissac, M.B.E.

Mr. P. G. Anthony

Mr. Raymond Hein, Q.C.

Mr. Maurice Martin

Mr. Francis North Coombes

Mr. P. O. Wiehe

Mr. Pierre de Sornay, *Chevalier de la Légion d'Honneur*.

The Board held eight meetings during the year. The assistance received from members in guiding College affairs is gratefully acknowledged.

### Staff

The vacant post of Lecturer in Agriculture has not yet been filled as the salary scale offered has not attracted any suitable candidate. The Secretary of State has been requested to appoint an officer on contract.

The post of Assistant Lecturer in Sugar Technology has been vacant since the 24th May following the resignation of Mr. K. Mulnier who has accepted employment on a sugar estate. Lectures were delivered on a part-time basis by Mr. R. Thelemaque, Assistant Sugar Technologist of the Department of Agriculture.

### Admission, Entrance Scholarships and Number of Students

Twenty-one candidates applied for admission and sat for the Entrance Examinations held in April. Sixteen satisfied the examiners and were admitted to the Diploma Course. Mr. A. Tennant, who gained first place was awarded the entrance scholarship. The second entrance scholarship was not awarded.

The year 1955 marks an interesting development in the history of the College. Two students from Reunion were admitted to follow the Diploma and the Tropical Agriculture Courses respectively. It is hoped that this first step will induce other students from abroad taking advantage of the facilities offered in Mauritius for training in Tropical Agriculture.

The total number of students registered at the College during the year was 61 distributed as follows:—

| Course                   | Students       |
|--------------------------|----------------|
| Diploma ...              | 34             |
| Tropical Agriculture ... | 9              |
| Sugar Analysis ...       | 7              |
| Part-Time ...            | 11             |
|                          | <hr/> 61 <hr/> |



### Term—Attendance—Conduct

The College year began on 9th May. The three terms were divided as follows:—

|                                               | <i>Weeks</i>   |
|-----------------------------------------------|----------------|
| 9th May to 15th July, 1955 ... ..             | 10             |
| 12th September to 7th December ... ..         | 13             |
| 11th January, 1956 to 28th March, 1956 ... .. | 12             |
|                                               | <hr/> 35 <hr/> |

Attendance was regular and in general the conduct of the students was good.

### Results of Examinations

The results of the annual examinations which were held in April, 1955, were published in last year's Annual Report. At the time of writing the results of this year's examinations are not yet available. These will be published in next year's report.

### College Development

It was decided in 1955 to enlarge the existing College of Agriculture so as to have room to take 25 students a year in order to meet an increasing local demand of College graduates for Industry and Government. Plans for an extension of the College were made by Messrs. Boullé, Lagesse and Schaub and the contract to construct given to Hardy Jauffret & Co at the price of Rs 200,000. The building will be ready for occupation by June, 1956. A fair amount of equipment has been ordered and is gradually being put into service, so that the laboratories of the College will be well equipped when the reorganization is completed.

### Co-operation with Reunion

The annual visit of College third year students to Reunion took place in August 1955 when four students accompanied by the Principal and the Lecturer in Sugar Technology spent a week in Reunion. The visit as usual was full of teaching and the generous hospitality extended to the Mauritian party was fully appreciated by everyone.

No party of Reunion students came to Mauritius last year. It is expected however that these visits will be resumed in 1956.

### Prize-Giving

Prize-giving day was held on the 30th June, 1955, and was presided over by His Excellency the Governor, who kindly agreed to present the prizes. A large gathering attended the ceremony in the course of which speeches were delivered by His Excellency, the Director of Agriculture and the Principal.

The following students were awarded prizes:—

M. Perombelon, C. Carmagnole, A. Aumerally, C. Hein, R. Béchet, P. Le Merle, G. Bax, S. Moutia, D. Harel, G. Robert, E. Martin and C. Babet.

J. RENÉ LAGESSE,

*Principal, College of Agriculture.*

## Tea Division

### I. Administration

#### (a) TEA COMMITTEE

The Tea Committee for 1955 was constituted as follows:—

Mr. M. N. Lucie-Smith, Director of Agriculture (Chairman).

The Liaison Officer for Agriculture (Vice Chairman).

Hon. G. J. M. Schilling, M.L.C.—representing consumers.

Mr. L. Larcher }  
Mr. L. Ramdin } representing manufacturers

Hon. G. Venkatasamy, M.L.C. }  
Mr. M. Martin } representing planters

Mr. M. Merven }  
Mrs. E. Rochecouste } Additional appointed members.

Nine meetings of the Committee were held during the year.

#### (b) STAFF

Mr. R. B. J. Deane arrived in Mauritius on the 2nd February, 1955, and assumed duty as Government Tea Officer. Mr. D. N. Andrews continued to serve as Assistant Tea Officer.

#### (c) LEGISLATION

The Tea Industry Control (Amendment Ordinance No. 32 of 1955) was enacted at the end of the year under review and will take effect from 1st April, 1956. Under this Ordinance, when read in conjunction with new Regulations yet to be promulgated, blending and packing of all locally produced teas will be restricted to registered factory premises and the number of different sized retail packets will be reduced and standardised.

#### (d) PROJECTS

Proposals were prepared for a programmed expansion of the Colony's tea industry. These, after consideration by the Tea Committee were the subject of debate in the Legislative Council on the 13th December when the principle were unanimously approved. The project envisages the development over five years of 3,000 to 3,500 arpents of new land under tea and services rendered by Government are estimated at some 4½ million rupees over the period 1956-60. This project is in the nature of a pilot scheme and may be enlarged during its span—it will probably be followed by a second and larger scale project upon completion.

A plan for initiating a Government operated "Brokers' Report Service" has been approved. This scheme is directed towards improving quality in Mauritian teas by means of an airmail service with brokers in London who will furnish reports and valuations on all teas received and will keep the Colony abreast of market trends.

## II. Visits

The Tea Officer visited Reunion for one week and Madagascar for two weeks at the request of the respective Directors of Agriculture. These tours were carried out between 10th November and the 1st December, 1955, and Mr. Deane was engaged throughout on advisory duties.

### III. Tea Experimental Station, Wooton

There are now seven acres under tea at Wooton Experiment Station. It has been decided, for the time being, not to extend this area, but to concentrate upon improvements to the existing tea and upon modest experimental work.

A block of four acres of new land has been cleared in a central position as a special plot within which small-scale experiments and multiplication projects can be carried out. This area has already been roughly laid out and it is proposed to put three acres under green crop and to bring the remaining acre under cultivation as and when opportunities occur.

Ten acres of new land in Sections 8 and 9 were planted seed at stake in the early part of the year. Seed was short and some poor residue seed had to be employed in parts, with the result that there is a high incidence of vacancies. In the main, growth has been satisfactory. Some damage by cut-worms has been noted.

Most of the two-year old plants had to be pruned back to 6" in the second quarter as they had made unchecked growth for too long a period. These plants took the low cut very well and are now developing satisfactory frames.

Mature tea, one year up from pruning, was 'skiffed', and the remainder—after two seasons in bearing—was clean pruned. One small test plot was left to bear for a third season unpruned.

The policy of bending and pegging young plants was continued and these plants were initially headed back at about 14" from ground level on all new growth.

Tea in bearing produced an overall yield of 948 pounds made tea per acre. Noteworthy yields of 1,054 and 1,265 pounds made tea to the acre were recorded in respect of Sections 2 and 3 respectively and these yields are considered to be satisfactory at 5 years of age.

Fertiliser applications were increased, but shortage of labour delayed this work to some extent and was completed rather late in the year.

Grevillea shade was thinned out and a considerable area was pollarded at 8 feet in view of damage sustained in February wind-storms. Propagation of *Erythrina lithosperma* was commenced as a possible alternative semi-permanent shade, and *Glyricidia maculata* will also be tried. Certain other possible varieties of seed were planted.

Green crops were uprooted or lopped. Crotalaria was planted in one area of new tea. Plants of "Flemingia", an unidentified green crop imported from Madagascar, gave promising indications of suitability as an inter-row crop for tea.

Fifteen special pepper plants imported from Madagascar (Lada Balantoeng) were planted. It is hoped that these will provide stock for future multiplication with a view to growing this vine on shade trees in tea.

About one eighth of an acre of young Nyasaland plants were 'layered' in Section 1 (b) in mid-October. Subsequent examination revealed indications of considerable success and in view of this no time was lost in 'layering' a



further half an acre of pure Assam strain in Section No 6. If successful, the resultant plants from this Assam strain will be utilised to plant up a new seed-bearer plot.

Tipping was carried out at 8" throughout except for a few small test areas and plucking is now under way. Drought conditions at the beginning of the harvest season considerably retarded crop.

Roads were sprayed with T.C.A. and Sodium Chlorate for weed suppression and the foundation of the central (SW/NE) estate road was completed. A number of culverts were laid, and concrete fencing posts were pre-cast. A Stevenson's screen was erected and the raingauge re-sited, and a sun-recorder is now being installed.

One new 3-ton Bedford lorry, and one small Ransomes M.G. 6 tractor and connected equipment were received and put into operation.

#### IV. Midlands Estate

Some 65 acres of new land were planted out of the 100 acres scheduled. Climatic conditions and, later, shortage of seed precluded accomplishing more than this area. It is not intended to extend the planted area beyond the 35 acres which remain unplanted at the present time: when this has been completed the total area under tea will amount to some 233 acres.

Established areas made good growth, but lack uniformity to a marked degree. The new areas made moderate growth, having received something of a check during the October/November drought.

Much of the *Grevillea* was thinned, and a proportion pollarded at eight feet. Green crops were uprooted or lopped, and propagation of *Stylothanes gracilis* was commenced. Newly planted areas were sown with *Tephrosia candida*.

Mature tea was 'skiffed' and some 45 acres of young tea due to come into bearing this season had to be pruned back to 6" owing to unchecked growth—as in the case of Wooton. Young plants were pegged and broken back at about 14" as an initial level.

Yield produced by 14 acres of tea in its first bearing season amounted to 554 pounds of made tea to the acre which is considered to be reasonably satisfactory, although not remarkable.

Initial action was taken with a view to conversion of spaced and selected bushes, over some 60 acres of the oldest tea, to seed-bearing. Bushes were selected and staked and permitted to grow unplucked—plucking continued between the selected bushes. This action is necessitated by the inadequacy of local sources of approved seed and the imminence of large scale development, and it is hoped to obtain a seed crop in two seasons.

An old shooting lodge on the Estate perimeter was reconditioned for occupation by the Superintendent of Tea Plantations. Two prefabricated wooden buildings were purchased and erected as an office and a store in February. Work on a new pipe line to supply water to the estate was begun by the Public Works Department at the end of the year.

Foundation work on a main estate road was partially completed and a number of new culverts were put down.

## V. Seed Bearers

Cyclonic storms in February caused a substantial loss in crop and the final harvest only amounted to 5,968 pounds of seed against 6,666 pounds in the previous year. No imports from overseas to supplement this shortfall were found to be practicable. Routine maintenance of plots of seed-bearers at Parc-aux-Cerfs and at Midlands was carried out. Fertiliser applications were substantially increased, and four acres of Parc-aux-Cerfs trees which were prejudicially dense at an interval of 8' x 7' were thinned out.

An area of twelve arpents at Nouvelle Découverte has been taken over for development as a seed-garden. Clearing operations have already commenced.

Imports of acceptable varieties of seed from Africa to supplement our own harvest in 1956 are proving most difficult to arrange, but negotiations are proceeding.

## VI. Manufacture

Much can be done to improve the quality of Mauritian teas by better control of the various stages in manufacture from withering and fermentation to firing and grading. These and other points are to receive further attention in the coming year as soon as Staff reinforcements are received. Casual instruction on spasmodic visits is of little avail, and it is necessary to spend days on end at a factory to put manufacture on the correct lines. La Flora factory has added to its withering space and now requires additional grading and storage space before it can operate efficiently, as well as a new heater and drier. Bois Chéri is constructing a significant extension to the main building wherein a new E.C.P. machine will be installed and as a result of which additional fermenting space will become available.

Considerable importance is attached to the potential advantages to be gained from the new Brokers' Report Service mentioned at Section I (d) above in so far as improved quality is concerned.

## VII. Production

The Colony's total production of black tea during the year again increased, and amounted to 1,340,026 English pounds. This represents an increase of 197,039 lbs. upon the previous year's outturn and is largely attributable to the maturing of young tea areas.

Green tea production showed only a very slight increase over the previous year and amounted to 1,822 lb. for 1955.

PRODUCTION FOR THE FIVE FACTORIES DURING THE LAST FIVE YEARS IN ENGLISH LB.

|                        | 1951          | 1952          | 1953          | 1954            | 1955            |
|------------------------|---------------|---------------|---------------|-----------------|-----------------|
| Bois Chéri ... ..      | 379,035       | 400,484       | 417,558       | 577,883         | 634,780         |
| Corson ... ..          | 252,477       | 257,663       | 274,922       | 298,898         | 317,014         |
| La Flora ... ..        | 110,690       | 131,828       | 132,377       | 160,838         | 246,832         |
| Pont Colville ... ..   | 66,868        | 74,673        | 67,786        | 71,621          | 104,657         |
| Nouvelle France ... .. | 32,090        | 18,702        | 15,161        | 33,747          | 36,743          |
|                        | <hr/> 841,160 | <hr/> 883,350 | <hr/> 907,804 | <hr/> 1,142,987 | <hr/> 1,340,026 |
| R. Aubeeluck ... ..    | 4,238         | 2,542         | 1,473         | 1,643           | 1,822           |

**VIII. Exports and Imports**

| <i>Year</i>         | <i>Exports</i> | <i>Imports (including<br/>Green Tea)</i> |
|---------------------|----------------|------------------------------------------|
| 1951 ... ..         | 89,826         | 47,641                                   |
| 1952 ... ..         | 16,035         | 94,822                                   |
| 1953 ... ..         | 76,755         | 111,878                                  |
| 1954 ... ..         | 249,673        | 36,080                                   |
| 1955 ... ..         | 374,217        | 35,076                                   |
| <i>Exports to</i>   |                |                                          |
| United Kingdom ...  | 1955 311,579   | 1954 161,457                             |
| South Africa ...    | 13,110         | 39,950                                   |
| Holland ...         | 34,487         | 41,190                                   |
| Madagascar ...      | 1,586          | —                                        |
| Reunion ...         | 6,580          | 3,432                                    |
| New Zealand ...     | 6,875          | —                                        |
| France ...          | —              | 3,644                                    |
|                     | 374,217        | 249,673                                  |
| <i>Imports from</i> |                |                                          |
| Ceylon ...          | 1955 28,272    | 1954 28,778                              |
| Hong Kong ...       | 5,847          | 7,291                                    |
| China ...           | 957            | —                                        |
| India ...           | —              | 11                                       |
|                     | 35,076         | 36,080                                   |

**IX. Planted Areas**

Area of tea in bearing in the Colony=2,017.54 acres.

Licences to plant under tea issued during the year (41 licences) totalling 110.84 acres.

R. B. J. DEANE,  
*Government Tea Officer.*

**Livestock Division****Staff**

Mr. J. G. S. Bennie, Animal Husbandry Officer, went on overseas leave in November prior to termination of his contract. Mr. R. Bouvet, Veterinary Officer, resigned from his post on 31st December.

**Disease Control**

*Tuberculosis.*—The campaign of the control of bovine tuberculosis by tuberculin tests and elimination of reactors has proved of high value. The aim is to eradicate the disease from the herds by the principle of repeated testing.

*Contagious Abortion.*—The disease has been kept under control by regular vaccination with S. 19 strain of vaccine imported from Kenya. The agglutination test continues to reveal reactors, which are immediately segregated. This policy of segregation of reactors and vaccination of calves and heifers has shown extremely good results.



*Deficiency Diseases.*—About 1,350 cases of hypocalcoemia and ricket were treated. Most of the cases of hypocalcoemia responded to intra-veinous injection of calcium gluconate, but advanced cases of rickets could not be cured, with the result that the animals affected had to be slaughtered.

*Internal Parasites.*—The animals most affected were mainly sheep and goats, but this year an unusual number of calves were found to be affected with stomach wire worm. Response to treatment was excellent.

*Poultry Diseases.*—This year Newcastle Disease has been severe among non-vaccinated birds. Thousands of chickens have been vaccinated with vaccine obtained from Madagascar during the first part of the year and during the last six months with the vaccine prepared at the Reduit Bacteriological Laboratory. Results obtained so far are extremely encouraging, the vaccinated birds developing a high degree of immunity.

Fowl Cholera has disappeared as a result of the progress of Newcastle Disease. This phenomenon has also been observed in other places. At fortnightly intervals during the hatching season fowlpox vaccine was received from Onderstepoort and thousands of chicks were vaccinated. Amongst these vaccinated birds no cases of fowlpox were reported.

### **Diagnosis of Pregnancy and Control of Sterility**

Over 1,000 milk cows were assessed for pregnancy. About 725 were detected to be suffering from cystic ovaries and were immediately enucleated. The treatment resulted in these apparently sterile cows returning to a normal breeding cycle.

### **Artificial Insemination**

The campaign of artificial insemination of milk cows now covers the whole island. About 7,750 cows and heifers were inseminated and, of these, about 1,000 were re-inseminated, making a total of 8,750 inseminations.

At the beginning of the year there were three inseminating centres, one at Curepipe, one at Reduit and one at Pamplermouses. The three centres have been combined into one, operating at Reduit. This centralization has been beneficial from all angles.

### **General Veterinary Assistance**

Calls received from breeders to attend cases other than those already mentioned amounted to 8,000 approximately.

### **Slaughter House and Meat Inspection**

All slaughter houses were constantly inspected, especially on the main slaughtering days at week-ends. The restriction on the slaughter of milk cows was maintained.

### **Veterinary Education**

Second-year students and those attending the Tropical Agriculture Course received lectures in Veterinary Science and Animal Husbandry. Lectures on meat inspection were given to Sanitary Inspectors of the Medical Department.

### **Quarantine Kennels**

Seventeen dog were imported during the year and they all underwent six months' quarantine at the Government kennels.

### **Government Dairy**

The total milk production for the year was 127,733 litres which is the highest production ever attained at the Dairy.

Extensive feeding trials with ureated molasses were carried out with the object of assessing the value of urea as a substitute for concentrates for milk production. Results are encouraging and disclose that ureated molasses could substitute 50 per cent or so of the concentrates without adverse effects on the milk production, thereby reducing considerably the cost of feeding.

### Palmar Breeding Centre

The Centre is still used as an experimental station for breeding purposes and for milk production.

The Creole milk cows were used for milk production trials under improved methods of management.

The Ongole cattle have done a lot to improve local Zebus and continue to do so. Crosses obtained are resistant to adverse conditions like heat and flies, and do fairly well on poor pastures.

The flock of sheep has produced pure-bred Dorsians and crosses which have been used to better the local animals; the effect of the Dorsian blood has improved the lambs which are faster-growing, thereby increasing the carcass weight of mutton in the markets.

Local goats have been considerably improved by crossing with Anglo-Nubian bucks, these half-breds are very popular amongst the small breeders who use the bucks as sires.

ANTOINE DARNÉ,  
Senior Veterinary Officer.

## Plant Pathology Division

### Staff

The Plant Pathologist went on leave as from the beginning of the year and retired from the service on the 2nd July. He was re-employed from the 1st September. During his absence, the Plant Inspector Mr. L. Orioux, was in charge of the Division and was appointed Assistant Plant Pathologist.

### Diseases of the Sugarcane

Inasmuch as the Mauritius Sugar Industry Research Institute has now taken over research work on sugarcane and as a Pathologist has been appointed on the staff of the Institute, investigations into sugarcane diseases have been of very limited nature.

It was mentioned in last year's report that a disease with the characteristics of red stripe had been detected on a small estate and that the grasses *Paspalum nutans* Lam. and *P. paniculatum* L. had also been observed diseased in the affected field. During his leave the Plant Pathologist volunteered to carry out the preliminary researches which he had started on the subject. These investigations were restricted chiefly to the disease on the sugarcane and on *Paspalum nutans*. As the Plant Pathologist was due to retire from office after his leave, the results of the work effected were briefly added to the report submitted for 1954. That work had chiefly consisted in isolating the causative organisms from the two plants mentioned, in cross-inoculation into the two hosts, in reisolating these organisms from the

\* *Xanthomonas rubrilancea*

inoculated plants and in testing the pathogenicity of the reisolates towards sugarcane. The results proved that the disease of sugarcane and of *P. nutans* was due to the same pathogen.

During the time these researches were in progress, work of an exploratory nature was effected by the Assistant Plant Pathologist with the disease on *P. paniculatum*, and the indications obtained were that it, too, was caused by the same pathogen. A maize plant had been observed in the affected field with a striping on parts of some of its leaves, and here again, the results obtained showed that the same pathogen was in cause.

The disease on sugarcane had, at first, been found on only one estate on the two varieties B.3337 and B.37161, but it was later detected on the same varieties and on B.37172 on four other estates in the island, as also at the Central Experiment Station at Reduit and in a propagation plot at Moka. One case was also observed on E1/37. No cases of top rot developed on the diseased canes, although a partial rotting of the spindle leaves occurred in some cases. The symptoms on sugarcane in the field disappeared after a few months and no damage apparently resulted from the attacks. It is probable that the climatic conditions during late 1954 and early 1955 were particularly favourable to the development of the disease on these two varieties.

No clue has yet been obtained as to how the disease originated and as to the exact role of the wild grasses in its occurrence.

According to information received from the Pathologist of the Mauritius Sugar Industry Research Institute, ratoon-stunting disease has been found widespread, chiefly in the humid and super-humid areas of the island. Chlorotic streak is still widely present in the elevated and semi-elevated parts of the island and at lower altitudes where drainage is defective. A bad outbreak of red rot occurred on M.134/32 on an estate in Plaines Wilhems district; the attack was associated with severe drought conditions.

### Maize

The tropical maize rust caused by *Puccinia polysora* Und. was again not very severe this year.

In May, specimens of diseased maize leaves were received from Rodrigues island, a dependency of Mauritius distant 400 miles to its East, and the disease was found to have been caused by *P. polysora*. The attack was reported as severe.

In the same month, Mr. R. Mamet, Assistant Entomologist, during a visit at Agalega island, collected specimens of diseased maize leaves which were also found in Mauritius to have been attacked by the same rust. At Agalega, which is 500 miles north of Mauritius, there existed only a few small patches of poorly-growing plants cultivated by the labourers.

Arrangements were made with the Directors of Diego Ltd., for specimens of any diseased maize leaves which could be found in the Chagos Archipelago—another dependency about 1,200 miles north-east of Mauritius—to be collected and forwarded to the Department of Agriculture. The Secretary of Diego Ltd., who intended to visit these islands during the month of December, undertook to search for such specimens. With a view to helping him, poisoned museum specimens of maize leaves affected by *P. polysora* and by *P. sorghi* were



prepared and handed over to him. The Secretary returned to Mauritius at the end of December with the information that he had seen the few maize fields cultivated at Diego—the only island of the Chagos group where apparently some maize is regularly grown—without any disease symptoms on the leaves. Thus, *P. polysora* does not appear to have yet reached the Chagos Islands. The existence of the disease in that part of the Indian Ocean would constitute a threat to Ceylon, India and Pakistan.

### Filao (*Casuarina equisetifolia* Forst)

Researches on the diseases affecting the filao tree in Mauritius were resumed towards the end of the year, inasmuch as severe outbreaks of disease still occur at various places in the coastal belt. The researches were also directed towards determining if the strain of *Pseudomonas solanacearum* (Sm.), Dowson affecting the tree in the island is the same as that attacking the solanaceous plants commonly cultivated in the young filao plantations. This work is still in progress.

### Other Diseases

#### CITRUS

The disease formerly referred to as citrus decline in the island has been identified as Tristeza disease by the new Director of Agriculture who, as a former citrus specialist, has had previous experience with this disease.

#### TEA

A root disease in a small patch of tea at Wooton Experiment Station was investigated by the Acting Plant Pathologist.

The affected plants showed drying and dropping off of the leaves and blackening of the roots, on which no mycelium was found. The trouble apparently was not related to bad drainage. Orange-red perithecia, identified as a species of *Nectria*, developed on the roots after some time in the laboratory, and a species of *Cylindrocladium* was also detected on the roots.

The Commonwealth Mycological Institute later reported that the *Nectria* perithecia were considered to be those of *Sphaerostilbe repens* Berk. and Br. masquerading as a simple *Dialonectria*. A species of *Cylindrocladium* corresponding to that recorded on tea roots in Travancore and the conidial stage of *Nectria ochroleuca* (Schwein) Berk., recorded as a wound parasite on tea stems in Assam, had also developed on the roots kept in damp chamber.

#### PALMS

A disease of tall *Dictyosperma album* trees, characterized by failure of the leaflets of individual leaves to separate from one another after the leaf has opened out was attributed to injury caused by hormones used as weed-killers. In advanced stages, the leaves are much shortened and become twisted and contorted; death of the plant finally occurs. Apparently, palm trees are very susceptible to such injury. The affection had, a few years previously, also been observed on *Roystonea regia*.

#### ARTICHOKES

A disease characterized by death of the young flower-heads or by the drying out of the bracts from the tips downwards was investigated without definite result being obtained.

Carnation Root rot caused by *Sclerotium rolfii* Sacc.

*Antirrhinum* Rust caused by *Puccinia antirrhini* Diet and Holw., first record in the island.

*Oats* Rust caused by *Puccinia coronata* Corda.

*Cotton* Specimens from Agalega Island, rust caused by *Phakopsora desmium* (Berk and Br.) Cumm.

### Mission to Madagascar

At the request of the Director of the Mauritius Sugar Industry Research Institute, and with the consent of the Government of Mauritius and the approval of the Madagascar agricultural authorities, the Plant Pathologist during his leave visited the Fiji-disease affected region on the East coast of Madagascar.

### Control of Imported Plant Material

#### CANE QUARANTINE GREENHOUSE

The canes received from Coimbatore, Australia and the U.S.A. in 1954 were planted in second generation in the greenhouse in April. Shortly afterwards, a mild mottling was observed on the leaves of the variety Co. 911. That variety was immediately destroyed, although it was not certain that the symptoms were due to mosaic disease.

#### PLANT INSPECTION AT THE CUSTOMS AND AIRPORT

The control of the importation of plants and plant parts continued as in the past.

#### LEGISLATION

Owing to the existence of rose virus disease in certain countries, Proclamation No. 14 of 1955 was issued, prescribing the conditions under which rose plants may be imported.

### Miscellaneous

#### RADIO TALKS AND PUBLICATIONS

At the request of the Senior Agricultural Officer (Extension Service), a talk on "The Diseases of Plants and their Control" was delivered at the Mauritius Teachers' Training College. An abridged version of the talk was broadcast later.

A talk on the Fiji disease of sugarcane, broadcast in September, was published in the "Revue Agricole et Sucrière de l'Ile Maurice" (1955, 1. 28-34).

The following articles were also written during the year for publication:—

"Fiji Disease of Sugarcane in Madagascar", published in Commonwealth Phytopathological News (1955, 1, 7-8).

"Occurrence of a disease similar to Red Stripe of Sugarcane in Mauritius", forwarded to the 9th Congress, Int. Soc. Sugarcane Technologists, to be held in India in 1956.

"Sugarcane Diseases in Mauritius", forwarded upon request to the Indian Central Sugarcane Committee in New Delhi, for a journal devoted to Sugarcane Research and Development, about to be published.

G. ORIAN,  
Plant Pathologist.

## Entomological Division

### Staff

One post of Scientific Assistant was vacant throughout the year.

### Sugarcane

#### CHLOROTIC STREAK DISEASE

The experiments carried out in 1954 to discover an insect vector were not continued during the year under review. It is now considered that this disease should be studied from other aspects before any resumption of transmission experiments with insects. The mode of natural transmission of the disease, other than that which occurs by vegetative propagation of diseased cane, remains unknown and a better knowledge of its aetiology will probably be necessary before the problem is solved.

The data so far obtained from field trials to assess rapidity of infection of healthy plants and the effect of environment upon the disease have been communicated to the Plant Pathologist of the Mauritius Sugar Industry Research Institute, who is continuing and extending the work. An account of these trials, which are essentially of a preliminary nature, is not therefore desirable at this point. It may, however, be said that infection of plants originating from HWT cuttings (20 mins. at 52°C.) may occur at an early stage of growth and about 25 per cent of such plants may exhibit disease symptoms during virgin growth under field conditions which favour the disease. The results of one experiment indicated that healthy canes (originating from HWT cuttings) growing in drums of steam sterilised soil do not acquire the disease when exposed to infection in the field.

#### THE WHITE GRUB, *CLEMORA SMITHI* (ARR.)

Promising results were obtained from two randomised block trials laid down last year to assess the efficacy of Chlordane as a means of control. The insecticide was applied in emulsion form at rates of 3 lb. and 6 lb. active ingredient in about 400 gallons water per arpent, respectively. Application was made in November, which is the beginning of the adult season, and watering cans were used to avoid spray drift over the experimental plots. In one trial, the emulsion was applied to the open furrows before planting, and in the other, to the soil along the rows of recently harvested ratoon cane. Each treatment, in both trials, had ten replicates and plot size was five rows by four gaulettes. Results were assessed in June by digging up one gaulette of cane row in the middle of each plot and counting the larvae found. It will be seen from the following figures, which are for mean number of larvae per gaulette of cane row, that the insecticide, at both the high and the low rate of application, caused a highly significant reduction of infestation in both trials. Experiments are being continued.

| Method of application                 | Control | Treatments                        |                                   | Significant difference<br><i>P</i> = 0.01 |
|---------------------------------------|---------|-----------------------------------|-----------------------------------|-------------------------------------------|
|                                       |         | 3 lb a.i.<br>Chlordane/<br>arpent | 6 lb a.i.<br>Chlordane/<br>arpent |                                           |
| To open furrows when planting ...     | 7.7     | 1.6                               | 0.4                               | 3.5                                       |
| To soil along rows of ratoon cane ... | 113.0   | 67.5                              | 47.0                              | 29.1                                      |

During the year, several sugar sugar estates carried out surveys to assess white grub infestation in their fields according to the method recommended by the Department.



### THE SPOTTED STALK BORER, *PROCERAS SACCHARIPHAGUS* BOJ.

The introduction of the *Diatraea* parasites *Palpozenillia palpalis* Aldr. and *Apanteles diatraeae* Mues. was continued during the early part of the year with the aid of the Commonwealth Institute of Biological Control.

A total of seven consignments of *Palpozenillia*, comprising some 2,500 puparia, were received during December 1954—February 1955 and these enabled the release in borer-infested fields of about 1,500 flies which had first been mated in the laboratory. One consignment of *Apanteles* was received in addition to those mentioned in the Annual Report for 1954 and the total number of this species released during December 1954—January 1955 was about 900.

The systematic introduction of *Diatraea* parasites from the Caribbean area, begun in 1947, has now been terminated. The following is a complete list of the species introduced and the dates of their introduction:—

|               |                                                    |
|---------------|----------------------------------------------------|
| 1947          | <i>Paratheresia claripalpis</i> Wulp.              |
| 1947-48       | <i>Lixophaga diatraeae</i> Towns.                  |
| 1949          | <i>Metagonistylum minense</i> Towns.               |
| 1949-51, 1953 | <i>Agathis stigmaterus</i> Cress.                  |
| 1950, 1954    | <i>Telenomus alecto</i> Craw.                      |
| 1953          | <i>Ipobracon</i> sp. (? <i>grenadensis</i> Ashm.). |
| 1954          | <i>Spilochalcis dux</i> Wlk.                       |
| 1951, 1954-55 | <i>Apanteles diatraeae</i> Mues.                   |
| 1954-55       | <i>Palpozinillia palpalis</i> Aldr.                |

None of these parasites has been recovered in the field, although no search has yet been made for those most recently introduced.

### SUGARCANE LEAFHOPPERS

An investigation of the biology and bionomics of sugarcane Delphacidae is being made owing to the potential importance of these insects as vectors of Fiji Disease which, by its presence in Madagascar, threatens Mauritius. The species involved are *Perkinsiella sacccarioida* Kirk, and *Dicranotropis muiri* Kirk. Only the former is a known vector of the disease but the two species have very similar habits and their bionomics are related owing to parasites which are common to both. Much data has already been obtained but an account of the work, which is continuing, will eventually be published separately.

### SCALE INSECTS

Two localised attacks of *Pulvinaria* sp. on ratoon cane, covering an area of about 5 arpents and  $\frac{1}{4}$  arpent respectively, were reported in December. Many heavily infested cane stools showed retarded growth while some had apparently been killed by the scale.

The outbreaks are of particular interest for *Pulvinaria* has been rare in cane fields for many years. Three species of Chalcidoid parasites and a Coccinellid predator were found and it is probable that the drought experienced during the later months of the year upset the natural control of the scale which normally is believed to be the effective factor in maintaining its numbers at a low level. The specific identity of the scale is still in question for there has been confusion in Mauritius between the species *P. elongata* Newst. and *P. iceryi*, (Guer).

## General

### MITES

A comprehensive study of the various species of mites attacking tomato, egg-plant, tea, coconut, citrus and other orchard plants was continued during the year by the Associate Entomologist.

As a result of further searches, it is now concluded that the coccinellids *Stethorus jejunus* Casey and *S. picipes* Casey, introduced against Tetranychid mites in 1950 and 1952 respectively, failed to become established.

### PESTS OF THE PIGEON PEA (CAJANUS CAJAN)

Continuing the policy of parasite introduction against the important pests of this plant, ten consignments of *Chelonus buskiella* Vier., a parasite of *Maruca testulalis* Gey., were received from the Commonwealth Institute of Biological Control. The consignments enabled the release of over 500 adults.

### Miscellaneous

- (a) Owing to the absence of the Plant Pathologist, the Entomologist took charge of the plant inspection service, the control of plant imports, and the cane quarantine greenhouse from December, 1954, to September 1955.
- (b) At the request of the French authorities, consignments of the cane moth-borer parasites *Apanteles sesamiae* Cam. and *A. flavipes* Cam. were sent to Madagascar. Consignments of the former were also sent to Reunion Island.
- (c) The Assistant Entomologist visited Agalega Island in May, following a request by Agalega Ltd., to investigate the pests and diseases of cotton and to report upon the projected methods for the cultivation of the plant in that island.
- (d) The Entomologist visited Rodrigues Island in February to investigate the activities of the ant *Anoplolepis longipes* Jerd. This ant was presumably introduced fairly recently into Rodrigues from Mauritius and it has become extremely numerous in some localities where it causes great inconvenience to the inhabitants as well as irritating domestic animals and accentuating attacks of honey-dew producing insects on orchard and garden crops. The use of gammexane dusts was recommended to combat the ant.
- (e) Lectures in Agricultural Entomology were, as usual, delivered at the College of Agriculture by the Entomologist.

### Publications

The following, prepared by the Assistant Entomologist, was published during the year:—

- MAMET, J. R. 1953.—A revised food-plant catalogue of the insects of Mauritius. Dept. Agric. Bull. 90, 95pp.

J. R. WILLIAMS,  
Entomologist.

## Chemical Division

### Staff

The Chemist left the Colony on overseas leave on the 15th January and resumed duty on the 17th August. The Assistant Chemist and the Scientific Assistant acted as Chemist and Assistant Chemist respectively during his absence.

The Chemist retired on pension on the 31st December.

### Soils

Soils and subsoils from Midlands were analysed for the Tea Division. The results are given in Table I.

These soils are situated in the wetter parts of the Island, they present the characteristic features of the "Yellow Soils", viz., smaller amounts of clay and a corresponding increase of the sand fractions, when compared to the red soils of the dry regions, the pH values are low, they are well provided with organic matter, with a wide C/N ratio. The high content of combined water shows that the leaching of the soil has been considerable, the content of available phosphoric acid and available potash is low.

### Urea

Feeding trials with ureated molasses, a concentrate manufactured by the Maize Mill at Richelieu, are being carried out at the Government Dairy Curepipe. In the course of the experiments some information was obtained that biuret may be present as an impurity in commercial urea and that the substance is toxic to animals.

The advice of the Commonwealth Agricultural Bureau was sought and the information obtained was that Biuret is not toxic in the case of animals, but some crops such as pine apple and citrus are liable to damage, if the biuret content is above 2.5 per cent. There have however been no reports of harmful effects on sugarcane, and for crops grown in Mauritius the use of urea with less than 2½ per cent should be quite safe.

Biuret is formed from urea by heat and is likely to be in higher proportion in urea which has been pelleted by heat treatment than in crystalline urea.

Samples of urea (pellets and crystalline) imported in the colony were tested for their Biuret content. The figures varied from .75 to 1.94 per cent.

### Feeding Stuffs

Feeding stuffs from various sources were analysed, in order to ascertain their composition:—



(c) The *crude protein* content of some feeding stuffs was determined at the request of the Senior Agricultural Officer (Grassland). Figures are expressed on dry matter content:—

|                      | <i>Per cent</i> |
|----------------------|-----------------|
| Kikuyu ... ..        | 11·8            |
| Acacia leaves ... .. | 32 to 35        |
| Luzerne ... ..       | 20              |

(d) *Yams*

The starch content of 15 varieties of yams was determined. This investigation was carried out at the request of the Agricultural Division in view of the selection of the best varieties.

|                        | <i>Moisture<br/>per cent</i> | <i>Starch<br/>per cent</i> |
|------------------------|------------------------------|----------------------------|
| Danish ... ..          | 68·0                         | 28·40                      |
| Light Red ... ..       | 75·5                         | 23·57                      |
| Handeni I ... ..       | 77·0                         | 21·07                      |
| B. N. Lisbon ... ..    | 73·0                         | 25·34                      |
| Sealed ... ..          | 70·5                         | 27·24                      |
| Oriental ... ..        | 73·0                         | 24·73                      |
| Kahata Kondol ... ..   | 70·5                         | 28·10                      |
| Cush ... ..            | 73·0                         | 24·93                      |
| Horn ... ..            | 65·0                         | 32·85                      |
| Cambarre du Riz ... .. | 69·0                         | 26·89                      |
| Lisbon ... ..          | 79·5                         | 18·78                      |
| Angiliala ... ..       | 67·5                         | 30·25                      |
| Cambarre Betty ... ..  | 66·5                         | 23·68                      |
| Handeni II ... ..      | 72·5                         | 25·81                      |

#### HERBICIDES

(a) Some samples of herbicides were tested for their purity. The results were as follows:—

|                               | <i>Per cent</i> |
|-------------------------------|-----------------|
| Sodium Chlorate ... ..        | 96·9            |
| Sodium Trichloracetate ... .. | 93·0            |

#### MILK

The quarterly analyses of samples from the Government Dairy were performed as usual. The average figures are satisfactory.

|                | <i>Total<br/>solids %</i> | <i>Fat %</i> | <i>Solids<br/>Non Fat %</i> |
|----------------|---------------------------|--------------|-----------------------------|
| Morning ... .. | 12·09                     | 3·4          | 8·69                        |
| Evening ... .. | 12·83                     | 4·07         | 8·76                        |

The series of individual tests to determine the variations in the butter fat content of the "Creole" cows at Palmar and Reduit Experimental Stations were continued until the end of September.

The highest figure recorded was 6·4 per cent and the lowest 2 per cent.

## WATER

Samples of water collected from two important canals in the north of the island were analysed.

The variation in composition is negligible, and the water is being used as boiling feed water by a sugar factory.

|                                                     |     |     |     |     |     | <i>Canal<br/>Baudot</i> | <i>Canal<br/>Bathurst</i> |
|-----------------------------------------------------|-----|-----|-----|-----|-----|-------------------------|---------------------------|
| pH ...                                              | ... | ... | ... | ... | ... | 7.3                     | 7.2                       |
| Temporary Hardness (alkalinity)                     | ... |     |     |     | ... | 174.6                   | 177.6                     |
| Permanent Hardness                                  | ... | ... | ... |     | ... | nil                     | nil                       |
| Chloride as Cl                                      | ... | ... | ... | ... | ... | 18.0                    | 15.9                      |
| Sulfate as $\text{SO}_4$                            | ... | ... | ... | ... | ... | 5.9                     | 6.1                       |
| $\text{Fe}_2\text{O}_3$ and $\text{Al}_2\text{O}_3$ | ... | ... | ... | ... | ... | 3.2                     | 4.0                       |
| Calcium as $\text{CaO}$                             | ... | ... | ... | ... | ... | 31.4                    | 23.3                      |
| Magnesium as $\text{MgO}$                           | ... | ... | ... | ... | ... | 11.1                    | 9.0                       |

## FISH PONDS

Water from the fish ponds at Belle Rive and Curepipe, where Tilapia species are being bred, was tested for pH alkalinity, Nitrate and Phosphate with the following results:—

|                      |     |     |     |     |                | <i>Alkalinity<br/>as <math>\text{CaCO}_3</math><br/>p.p.m.</i> |
|----------------------|-----|-----|-----|-----|----------------|----------------------------------------------------------------|
|                      |     |     |     |     | <i>P.H.</i>    |                                                                |
| <i>Belle Rive :—</i> |     |     |     |     |                |                                                                |
| Upper Pond           | ... | ... | ... | ... | 6.0            | 12.6                                                           |
| Lower Pond           | ... | ... | ... | ... | 6.0            | 12.5                                                           |
| <i>5 Ways :—</i>     |     |     |     |     |                |                                                                |
| Pond No. 1           | ... | ... | ... | ... | 6.2            | 12.5                                                           |
| Pond No. 2           | ... | ... | ... | ... | 6.1            | 12.5                                                           |
| Pond No. 3           | ... | ... | ... | ... | 6.2            | 40.0                                                           |
| <i>Curepipe :—</i>   |     |     |     |     | 7.5            | 25.0                                                           |
|                      |     |     |     |     |                |                                                                |
|                      |     |     |     |     | <i>Nitrate</i> | <i>Phosphate</i>                                               |
| <i>Belle Rive :—</i> |     |     |     |     |                |                                                                |
| Feeding Stream       | ... | ... | ... | ... | nil            | nil                                                            |
| Pond                 | ... | ... | ... | ... | nil            | nil                                                            |

## Routine analyses

499 samples were received involving 583 determinations.

The preparation and standardisation of acids and alkalis solutions for estates was carried out as usual.

F. BERCHON,

*Acting Chemist,*

TABLE I  
MECHANICAL ANALYSIS SOILS FROM MIDLANDS TEA PLANTATIONS

|                                                    | Sample 1<br>Topsoil | Sample 2<br>Subsoil | Sample 3<br>Topsoil | Sample 4<br>Subsoil | Sample 5<br>Topsoil | Sample 6<br>Subsoil | Sample 7<br>Topsoil | Sample 8<br>Subsoil | Sample 9<br>Topsoil | Sample 10<br>Subsoil |
|----------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Stones and gravel                                  | 18                  | 18                  | 28                  | 30                  | 24                  | 26                  | 24                  | 14                  | 24                  | 26                   |
| Coarse Sand                                        | 11.6                | 22.6                | 16.2                | 19.3                | 15.0                | 20.8                | 21.2                | 15.3                | 23.4                | 19.7                 |
| Fine Sand                                          | 25.8                | 28.1                | 22.4                | 27.5                | 26.4                | 29.5                | 30.3                | 44.3                | 22.2                | 26.6                 |
| Silt                                               | 11.5                | 18.9                | 25.8                | 23.9                | 34.8                | 28.3                | 20.0                | 24.0                | 13.5                | 23.8                 |
| Clay                                               | 28.4                | 24.4                | 28.8                | 27.0                | 20.6                | 22.0                | 27.6                | 19.5                | 34.9                | 29.6                 |
| Organic matter                                     | 9.1                 | 6.4                 | 9.3                 | 6.0                 | 6.5                 | 2.8                 | 4.5                 | 1.9                 | 6.9                 | 3.3                  |
| Loss in solution                                   | 0.9                 | 0.3                 | 1.1                 | 0.6                 | 1.1                 | 0.6                 | 1.0                 | 0.3                 | 0.3                 | 0.4                  |
|                                                    | 87.3                | 100.7               | 98.6                | 104.3               | 104.4               | 104.0               | 109.1               | 105.3               | 101.2               | 106.4                |
| CHEMICAL ANALYSIS                                  |                     |                     |                     |                     |                     |                     |                     |                     |                     |                      |
| Organic carbon                                     | 5.27                | 3.69                | 5.41                | 3.50                | 3.79                | 1.60                | 2.62                | 1.10                | 3.99                | 1.94                 |
| Nitrogen                                           | 0.21                | 0.13                | 0.22                | 0.15                | 0.12                | 0.07                | 0.11                | 0.17                | 0.25                | 0.08                 |
| C/N Ratio                                          | 25.1                | 28.4:1              | 24.6:1              | 23.3:1              | 31.6:1              | 23.1                | 23.9:1              | 6.5:1               | 16:1                | 24.3:1               |
| P <sub>2</sub> O <sub>5</sub> soluble in conc. HCl | 0.05                | 0.07                | 0.15                | 0.10                | 0.09                | 0.12                | 0.16                | 0.13                | 0.03                | 0.02                 |
| Available P <sub>2</sub> O <sub>5</sub> (Truog)    | 0.0015              | 0.0019              | 0.0018              | 0.0026              | 0.0020              | 0.0009              | 0.0005              | 0.0005              | 0.0009              | 0.0009               |
| K <sub>2</sub> O soluble in conc. HCl              | 0.104               | 0.054               | 0.085               | 0.095               | 0.079               | 0.071               | 0.081               | 0.062               | 0.084               | 0.063                |
| Exchangeable K <sub>2</sub> O                      | 0.017               | 0.010               | 0.010               | 0.009               | 0.016               | 0.016               | 0.013               | 0.016               | 0.016               | 0.017                |
| Combined water                                     | 17.2                | 18.1                | 17.7                | 18.7                | 17.3                | 18.8                | 19.4                | 20.1                | 20.3                | 20.2                 |
| pH                                                 | 6.2                 | 6.3                 | 6.3                 | 6.4                 | 6.3                 | 6.3                 | 6.2                 | 6.4                 | 6.2                 | 6.3                  |



## Engineering Division

During the year under review the 26 sugar factories in operation were visited as usual as well as the few working distilleries with a view to advising their technical staff on improved methods of manufacture and new techniques now employed in the industries concerned.

### Factory data

A record crop of 533,235 Metric tons has been obtained. The highest production by one factory amounted to 55,850 Metric tons, the lowest 7,267 Metric tons and the average 20,510 Metric tons. Other results are shown in Table I.

TABLE I  
AVERAGE CROP RESULTS 1950-1955

| <i>Year</i> | <i>Sucrose<br/>% cane.</i> | <i>Fibre<br/>% cane.</i> | <i>Mill<br/>Extraction.</i> | <i>Sucrose<br/>in sugar<br/>extracted<br/>% cane.</i> | <i>Reduced<br/>B.H.R.</i> | <i>B.H.E.</i> | <i>No. of<br/>crushing<br/>hrs/day.</i> |
|-------------|----------------------------|--------------------------|-----------------------------|-------------------------------------------------------|---------------------------|---------------|-----------------------------------------|
| 1950 ... .. | 14.14                      | 11.8                     | 94.8                        | 12.05                                                 | 88.5                      | 99.0          | 19.9                                    |
| 1951 ... .. | 13.03                      | 11.8                     | 94.6                        | 10.94                                                 | 88.2                      | 98.6          | 19.3                                    |
| 1952 ... .. | 13.26                      | 11.8                     | 95.0                        | 11.26                                                 | 87.9                      | 98.0          | 18.6                                    |
| 1953 ... .. | 12.96                      | 11.7                     | 94.8                        | 10.88                                                 | 88.4                      | 98.3          | 19.2                                    |
| 1954 ... .. | 13.44                      | 11.7                     | 95.3                        | 11.48                                                 | 88.5                      | 98.4          | 19.4                                    |
| 1955 ... .. | 14.24                      | 11.6                     | 95.6                        | 12.42                                                 | 88.7                      | 99.0          | 19.8                                    |

### Routine analysis

Several samples of molasses, sugar, oils as well as incrustations and condensed water from evaporators were analysed at the request of factory owners and private local firms. In addition six milling tests were made during the year and advice was given to the sugar staff when necessary.

### Investigations

During the crop a new method of determining Fibre % cane was investigated. The canes were cut by an electrically driven circular saw longitudinally and also transversely every  $\frac{1}{2}$ ". The sawings were collected and the fibre content determined upon this sub-sample by churning in an electric shaker with a measured volume of water followed by washing with hot water on a buchner funnel provided with filter cloth and afterwards drying at 110°C in an electric oven. The results were compared for the two cases. The method with some improvement may give quite accurate results as is justifiable from the fact that the sub-sample analysed is more representative of the original canes than in the case of the other methods now practised.

Another important work done was the determination of the lead content of Mauritius sugars. Sugar samples from all factories of the island were analysed for lead in parts per million by the "dithizone method" and the conclusion reached was that the lead content of Mauritius sugars was well below the permissible limits recommended by the Ministry of Food.

Also, in the field of analysis, mention must be made of some flame work performed with a Beckman Spectrophotometer. A few determinations of potassium in molasses were successfully carried out with amazing speed by comparing the emission of the ash solution with those of a series of standard potassium solutions.

An interesting study was also made towards the end of the crop on the error introduced by the addition of the usual clarifying agent, viz., lead subacetate, (i) in powder form and (ii) in solution to sugar samples during analysis of local sugars. Representative sugar samples were collected from the docks and increasing amounts of both forms of lead subacetate added to the sugar solutions and the latter polarized. The results obtained showed that on sugars polarising  $98^{\circ}$ – $99^{\circ}$  Pol, there is a slight increase in polarisation when the wet lead form of clarifying agent is used, whereas there is a slight decrease in polarisation when dry lead is used. A separate paper will be published on this subject.

We should like here to refer to a study made in 1953 which was published under the title of "La Filtrabilité des sucres roux de Maurice". A great variation in the  $P_2O_5$  content of cane juices in the various regions of the island was detected. This factor affects greatly the work in the factory. However, as a side issue, it was suggested that large extents of lands in the high rainfall areas of Mauritius were deficient in phosphoric acid and the yearly application of soluble phosphate to these soils was recommended, a recommendation contrary to present practice which is to apply insoluble phosphates once per rotation of 5 to 7 years. These conclusions have now been confirmed by the Mauritius Sugar Industry Research Institute.

### Alcohol

Once again, Hong Kong remains the only overseas market to which rectified spirits were exported. 26,400 litres of  $94^{\circ}$  (G.L.) alcohol were exported to that Colony. All this alcohol was supplied by Medine Distillery; 14 samples were analysed and graded.

### Manufacture of Feeding Stuffs

The quality of feeding stuffs offered by the Maize Mill was greatly improved during the year by the admixture of such new products as cod liver oil, aureomycin, meat meal, lucerne, oats, yeast, bone flour, and dried milk. As a result, sales were increased (900 tons for 1955). Five different kinds of feeding stuffs are now offered for sale, namely pig, cattle, chicken and chick mixtures and ureated molasses.

The manufacture of ureated molasses is now being mechanised. A horizontal paddle type mixer of a rated capacity of half ton per hour has been completed. The composition of this mixture is 70 per cent molasses, 27 per cent bagasse and 3 per cent urea.

### Manufacture of Yeast Tablets

15,120,000 yeast tablets were manufactured from South African yeast powder out of which 14,130,000 were sold to Government Institutions and 249,600 to the public.

## Fibre Processing

### NEW DECORTICATORS

A new automatic decorticator feeder has been built and fitted to a standard raspador. With one unskilled operator up to 50 aloe leaves can be fed per minute giving an average of 1.2 tons of leaves per hour or a capacity nearly three times that of an ordinary raspador fed by two skilled operators. Further, as the scraper plate is thicker, more closely set and rubber sprung, little or no retting is required. Industrial losses are the same as on hand fed raspadors.

This feeder can be fitted to most existing types of decorticators.

### RASPADOR SETTING TESTS

Tests were carried out on a standard hand-fed raspador to determine the optimum settings to give a minimum of industrial loss.

Experiments were also carried out to determine the correlation between length, weight, fibre content and industrial loss of aloe leaves.

### ROSELLE

Retting tests were done on samples of Roselle of about 2 feet long for periods of 20 to 30 days in stagnant water. The fibre content for these short plants was found to vary from 2 per cent to 3 per cent, the fibre being gummy and stiff. The longer periods of retting were found to give a softer fibre.

## Richelieu Maize Mill

### MANUFACTURING ACCOUNT OF YEAST FACTORY FOR THE YEAR ENDING 30TH JUNE 1955

|                   |     | Rs. c.    |                              |     | Rs. c.    |
|-------------------|-----|-----------|------------------------------|-----|-----------|
| To cost of powder | ... | 6,877 47  | By cost of production trans- |     |           |
| To wages and cola | ... | 12,742 31 | ferred to Trading account    | ... | 20,249 28 |
| To electricity    | ... | 629 50    |                              |     |           |
|                   |     | <hr/>     |                              |     | <hr/>     |
| TOTAL             | ... | 20,249 28 | TOTAL                        | ... | 20,249 28 |

### TRADING ACCOUNT AS AT 30TH JUNE 1955

|                                    |     | Rs. c.    |                                |     | Rs. c.    |
|------------------------------------|-----|-----------|--------------------------------|-----|-----------|
| To cost of production from         |     |           | By sales to particulars        | ... | 1,235 00  |
| Manufacturing account              | ... | 20,249 28 | By sales to Government         |     |           |
| To stock of Tablets on 1-7-54      | ... | 43,057 00 | Departments                    | ... | 69,765 00 |
| To gross profit to Profit and Loss |     |           | By stock of Tablets on 30-6-55 | ... | 9,893 00  |
| account                            | ... | 17,586 72 |                                |     |           |
|                                    |     | <hr/>     |                                |     | <hr/>     |
| TOTAL                              | ... | 80,893 00 | TOTAL                          | ... | 80,893 00 |

### PROFIT AND LOSS ACCOUNT AS AT 30TH JUNE 1955

|                               |           | Rs. c.    |                              |     | Rs. c.    |
|-------------------------------|-----------|-----------|------------------------------|-----|-----------|
| To refund on Contract Tickets | ...       | 27 75     | By gross profit from Trading |     |           |
| To railway                    | ...       | 242 57    | account                      | ... | 17,586 72 |
| To petty expenses             | ...       | 665 22    |                              |     |           |
| To planks and timber          | ...       | 421 20    |                              |     |           |
| To stores                     | ...       | 985 00    |                              |     |           |
| To crown agents               | ...       | 217 00    |                              |     |           |
| To salaries of staff          | 2,292 00  |           |                              |     |           |
| To net profit                 | 12,735 98 | 15,027 98 |                              |     |           |
|                               |           | <hr/>     |                              |     | <hr/>     |
| TOTAL                         | ...       | 17,586 72 | TOTAL                        | ... | 17,586 72 |



MANUFACTURING ACCOUNT OF ANIMAL FEEDING STUFF DEPARTMENT  
FOR THE YEAR ENDING 30TH JUNE 1955

|                               | Rs.     | c. |                               | Rs.     | c. |
|-------------------------------|---------|----|-------------------------------|---------|----|
| To stock of commodities on    |         |    | By stock of commodities on    |         |    |
| 1.7.54 ... ..                 | 267,663 | 19 | 30.6.55 ... ..                | 239,003 | 55 |
| To purchases ... ..           | 294,926 | 70 | To cost of production trans-  |         |    |
| To wages and cola ... ..      | 18,304  | 87 | ferred to Trading account ... | 348,372 | 98 |
| To electricity ... ..         | 4,821   | 79 |                               |         |    |
| To aloe thread ... ..         | 311     | 89 |                               |         |    |
| To coal ... ..                | 229     | 00 |                               |         |    |
| To transport (inwards) ... .. | 102     | 00 |                               |         |    |
| To aloe bags ... ..           | 1,017   | 09 |                               |         |    |
|                               |         |    |                               |         |    |
| TOTAL ... ..                  | 587,376 | 53 | TOTAL ... ..                  | 587,376 | 53 |

TRADING ACCOUNT AS AT 30TH JUNE 1955

|                              | Rs.     | c. |                                | Rs.     | c. |
|------------------------------|---------|----|--------------------------------|---------|----|
| To cost of production from   |         |    | By sales ... ..                | 343,089 | 94 |
| Manufacturing account ... .. | 348,372 | 98 | By grinding of poonac ... ..   | 150     | 00 |
|                              |         |    | By gross loss transferred to   |         |    |
|                              |         |    | Profit and Loss account ... .. | 5,133   | 04 |
|                              |         |    |                                |         |    |
| TOTAL ... ..                 | 348,372 | 98 | TOTAL ... ..                   | 348,372 | 98 |

PROFIT AND LOSS ACCOUNT AS AT 30TH JUNE 1955

|                                       | Rs.    |    |                              | Rs.    | c. |
|---------------------------------------|--------|----|------------------------------|--------|----|
| To gross loss from Trading            |        |    | By transport by lorry ... .. | 3,898  | 92 |
| account ... ..                        | 5,133  | 04 | By net loss c/d ... ..       | 13,838 | 48 |
| To stores ... ..                      | 4,440  | 00 |                              |        |    |
| To travelling ... ..                  | 428    | 24 |                              |        |    |
| To wooden poles ... ..                | 302    | 80 |                              |        |    |
| To motor spirit ... ..                | 764    | 40 |                              |        |    |
| To repairs to lorry ... ..            | 1,027  | 40 |                              |        |    |
| To repairs to mills ... ..            | 2,806  | 86 |                              |        |    |
| To railway ... ..                     | 61     | 00 |                              |        |    |
| To transport outwards ... ..          | 255    | 00 |                              |        |    |
| To insurance ... ..                   | 299    | 32 |                              |        |    |
| To petty supplies ... ..              | 794    | 14 |                              |        |    |
| To depreciation of lorry (1/5) ... .. | 1,425  | 20 |                              |        |    |
|                                       |        |    |                              |        |    |
|                                       | 17,737 | 40 |                              | 17,737 | 40 |
| To net loss b/d ... ..                | 13,838 | 48 |                              |        |    |
| To salaries of staff ... ..           | 13,755 | 00 | By balance (loss) ... ..     | 27,593 | 48 |
|                                       |        |    |                              |        |    |
| TOTAL ... ..                          | 27,593 | 48 | TOTAL ... ..                 | 27,593 | 48 |

BALANCE SHEET OF ANIMAL FEEDING STUFF DEPARTMENT  
AS AT 30TH JUNE, 1955

| LIABILITIES                 |         |    |         | ASSETS                             |               |       |          |
|-----------------------------|---------|----|---------|------------------------------------|---------------|-------|----------|
|                             | Rs.     | c. |         |                                    | Ré.           | c.    |          |
| Accumulated profits         | 100,026 | 30 |         | Stock of commodities ... ..        | 239,003       | 55    |          |
| Add Profit 1953-54          | 26,975  | 92 |         | Aloe thread ... ..                 | 602           | 55    |          |
|                             |         |    | 127,002 | 22                                 | Stores ... .. | 5,340 | 49       |
| Accountant General (advance |         |    |         | Lorry ... ..                       | Rs. 7,126     | 00    |          |
| account ... ..              | 161,060 | 93 |         | Less Dep : ... ..                  | 1,425         | 20    |          |
| Creditors ... ..            | 52,506  | 83 |         |                                    |               |       | 5,700 80 |
|                             |         |    |         | Cubing and Pelleting Machine .     | 66,833        | 78    |          |
|                             |         |    |         | Spectrophotometer ... ..           | 9,250         | 33    |          |
|                             |         |    |         | Profit and Loss account (loss) ... | 13,838        | 48    |          |
| TOTAL ... ..                | 340,569 | 98 |         | TOTAL ... ..                       | 340,569       | 98    |          |

NOTE—Item "Salaries of Staff", which is paid by P.E., is only provided for and is not a direct charge to the Profit and Loss account. The net loss is Rs. 13,838.48 as shown in Balance Sheet,

STATEMENT OF ANIMAL FEEDING STUFF PROCESSED DURING THE FINANCIAL  
YEAR ENDED 30TH JUNE 1955

|                                   | Kilos   | Kilos   | Kilos   |
|-----------------------------------|---------|---------|---------|
| RECEIVING DEPARTMENT :—           |         |         |         |
| Stock on 1.7.54—                  |         |         |         |
| Molasses ... ..                   | 43,697  | —       | —       |
| Flour Sweeping ... ..             | 10,885  | —       | —       |
| Fish Meal ... ..                  | 3,970   | —       | —       |
| Calcium Carbonate ... ..          | 360     | —       | —       |
| Colonial Salt ... ..              | 195     | —       | —       |
| Groundnut Cakes ... ..            | 7,607   | —       | —       |
| Wheat Bran ... ..                 | 158,240 | —       | —       |
| Cotton Seed Cakes ... ..          | 16,270  | 241,224 | —       |
| PURCHASES :—                      |         |         |         |
| Urea ... ..                       | 10,130  | —       | —       |
| Flour Sweeping ... ..             | 5,750   | —       | —       |
| Baled Bagasse ... ..              | 101,305 | —       | —       |
| Molasses ... ..                   | 176,750 | —       | —       |
| Bagassillo ... ..                 | 110,540 | —       | —       |
| Colonial Salt ... ..              | 2,000   | —       | —       |
| Poonac ... ..                     | 195,445 | —       | —       |
| Fish Meal ... ..                  | 40,125  | —       | —       |
| Wheat Bran ... ..                 | 100,280 | —       | —       |
| Lucerne ... ..                    | 2,010   | —       | —       |
| Bone Meal ... ..                  | 5,590   | —       | —       |
| Cod Liver Oil ... ..              | 1,691   | —       | —       |
| Yeast Powder ... ..               | 700     | 752,316 | —       |
| TO MILLING DEPARTMENT :—          |         |         |         |
| Groundnut Cake ... ..             | 3,070   | —       | —       |
| Cotton Seed Cake ... ..           | 12,130  | —       | —       |
| Poonac ... ..                     | 44,575  | —       | 59,775  |
| STACK LOSS :—                     |         |         |         |
| Groundnut Cake ... ..             | 4,537   | —       | —       |
| Cotton Seed Cake ... ..           | 4,140   | —       | 8,677   |
| TO MIXING DEPARTMENT :—           |         |         |         |
| Molasses ... ..                   | 59,230  | —       | —       |
| Flour Sweeping ... ..             | 16,570  | —       | —       |
| Fish Meal ... ..                  | 30,805  | —       | —       |
| Colonial Salt ... ..              | 1,645   | —       | —       |
| Wheat Bran ... ..                 | 127,870 | —       | —       |
| Bagassillo ... ..                 | 12,790  | —       | —       |
| Bone Meal ... ..                  | 520     | —       | —       |
| Cod Liver Oil ... ..              | 520     | —       | —       |
| Lime ... ..                       | 360     | —       | —       |
| Urea ... ..                       | 1,018   | —       | —       |
| Baled Bagasse ... ..              | 16,120  | —       | —       |
| Lucerne ... ..                    | 1,660   | —       | 269,108 |
| STACK LOSS :—                     |         |         |         |
| Wheat Bran ... ..                 | 13,440  | —       | —       |
| Flour Sweeping ... ..             | 65      | —       | 13,505  |
| TO MOLASCUIT MIXING DEPARTMENT :— |         |         |         |
| Molasses ... ..                   | 74,400  | —       | —       |
| Wheat Bran ... ..                 | 8,250   | —       | —       |
| Bagassillo ... ..                 | 28,350  | —       | 111,000 |
| SALES :—                          |         |         |         |
| Molasses ... ..                   | 23,661  | —       | —       |
| Poonac ... ..                     | 1,000   | —       | —       |
| Fish Meal ... ..                  | 20      | —       | —       |
| Wheat Bran ... ..                 | 100     | —       | 24,781  |
| Carried over ...                  | 993,540 | 486,846 |         |

|                                      | <i>Brought forward ...</i> | <i>Kilos</i><br>— | <i>Kilos</i><br>993,540 | <i>Kilos</i><br>486,846 |
|--------------------------------------|----------------------------|-------------------|-------------------------|-------------------------|
| BALANCE OF STOCK ON 30.6.55 :—       |                            |                   |                         |                         |
| Poonac ... ..                        | 149,870                    | —                 | —                       | —                       |
| Molasses ... ..                      | 63,156                     | —                 | —                       | —                       |
| Bagassillo ... ..                    | 69,400                     | —                 | —                       | —                       |
| Urea ... ..                          | 9,112                      | —                 | —                       | —                       |
| Fish Meal ... ..                     | 13,270                     | —                 | —                       | —                       |
| Colonial Salt ... ..                 | 550                        | —                 | —                       | —                       |
| Baled Bagasse ... ..                 | 85,185                     | —                 | —                       | —                       |
| Yeast Powder ... ..                  | 700                        | —                 | —                       | —                       |
| Wheat Bran ... ..                    | 108,860                    | —                 | —                       | —                       |
| Lucerne ... ..                       | 350                        | —                 | —                       | —                       |
| Bone Meal ... ..                     | 5,070                      | —                 | —                       | —                       |
| Cod Liver Oil ... ..                 | 1,171                      | —                 | —                       | 506,694                 |
|                                      |                            |                   | 993,540                 | 993,540                 |
| MILLING DEPARTMENT :—                |                            |                   |                         |                         |
| From Receiving Department :          |                            |                   |                         |                         |
| Groundnut Cake ... ..                | 3,070                      | —                 | —                       | —                       |
| Cotton Seed Cake ... ..              | 12,130                     | —                 | —                       | —                       |
| Poonac ... ..                        | 44,575                     | 59,775            | —                       | —                       |
| To FLOUR STORE :—                    |                            |                   |                         |                         |
| Groundnut Cake ... ..                | 3,000                      | —                 | —                       | —                       |
| Poonac ... ..                        | 43,996                     | —                 | —                       | —                       |
| Cotton Seed Cake ... ..              | 11,955                     | —                 | —                       | 58,951                  |
| Industrial Loss ... ..               | —                          | —                 | —                       | 824                     |
|                                      |                            | 59,775            | 59,775                  |                         |
| MOLASCUIT MIXING DEPARTMENT :—       |                            |                   |                         |                         |
| From Receiving Department :—         |                            |                   |                         |                         |
| Molasses ... ..                      | 74,400                     | —                 | —                       | —                       |
| Wheat Bran ... ..                    | 8,250                      | —                 | —                       | —                       |
| Bagassillo ... ..                    | 28,350                     | 111,000           | —                       | —                       |
| To MOLASCUIT DEPARTMENT :—           |                            |                   |                         |                         |
| Molascuit and Brancuit recovered ... | —                          | —                 | —                       | 111,000                 |
|                                      |                            | 111,000           | 111,000                 |                         |
| MOLASCUIT DEPARTMENT :—              |                            |                   |                         |                         |
| From Molascuit Mixing Department :—  |                            |                   |                         |                         |
| Molascuit and Brancuit ... ..        | 111,000                    | —                 | —                       | —                       |
| Stock on 1.7.54 ... ..               | 7,175                      | 118,175           | —                       | —                       |
| To Mixing Department ... ..          | —                          | —                 | —                       | 117,875                 |
| Stack Loss ... ..                    | —                          | —                 | —                       | 300                     |
|                                      |                            | 118,175           | 118,175                 |                         |
| FLOUR STORE :—                       |                            |                   |                         |                         |
| Stock on 1.7.54 ... ..               | —                          | —                 | —                       | —                       |
| Poonac ... ..                        | 4,604                      | —                 | —                       | —                       |
| Groundnut Cake ... ..                | 6,945                      | —                 | —                       | —                       |
| Cotton Seed Cake ... ..              | 24,915                     | 36,464            | —                       | —                       |
| FROM MILLING DEPARTMENT :—           |                            |                   |                         |                         |
| Poonac ... ..                        | 43,996                     | —                 | —                       | —                       |
| Groundnut Cake ... ..                | 3,000                      | —                 | —                       | —                       |
| Cotton Seed Cake ... ..              | 11,955                     | 58,951            | —                       | —                       |
| To MIXING DEPARTMENT :—              |                            |                   |                         |                         |
| Poonac ... ..                        | 38,084                     | —                 | —                       | —                       |
| Groundnut Cake ... ..                | 8,945                      | —                 | —                       | —                       |
| Cotton Seed Cake ... ..              | 36,675                     | —                 | —                       | 83,704                  |
| STACK LOSS :—                        |                            |                   |                         |                         |
| Cotton Seed Cake ... ..              | —                          | —                 | —                       | 195                     |
| SALES :—                             |                            |                   |                         |                         |
| Groundnut Cake ... ..                | 1,000                      | —                 | —                       | —                       |
| Poonac ... ..                        | 8,035                      | —                 | —                       | 9,035                   |
| BALANCE OF STOCK ON 30.6.55 :—       |                            |                   |                         |                         |
| Poonac ... ..                        | 2,481                      | —                 | —                       | 2,481                   |
|                                      |                            | 95,415            | 95,415                  |                         |



## MIXING DEPARTMENT :—

## From Receiving Department :—

|                |     |     |     |         |         |   |
|----------------|-----|-----|-----|---------|---------|---|
| Molasses       | ... | ... | ... | 59,230  | —       | — |
| Flour Sweeping | ... | ... | ... | 16,570  | —       | — |
| Fish Meal      | ... | ... | ... | 30,805  | —       | — |
| Salt           | ... | ... | ... | 1,645   | —       | — |
| Wheat Bran     | ... | ... | ... | 127,870 | —       | — |
| Bagassillo     | ... | ... | ... | 12,790  | —       | — |
| Bone Meal      | ... | ... | ... | 520     | —       | — |
| Lime           | ... | ... | ... | 360     | —       | — |
| Urea           | ... | ... | ... | 1,018   | —       | — |
| Baled Bagasse  | ... | ... | ... | 16,120  | —       | — |
| Lucerne        | ... | ... | ... | 1,660   | 269,108 | — |

## From Molascuit Department :—

|                        |     |     |         |         |   |
|------------------------|-----|-----|---------|---------|---|
| Molascuit and Brancuit | ... | ... | 117,875 | 117,875 | — |
|------------------------|-----|-----|---------|---------|---|

## From Flour Store :—

|                  |     |     |     |        |        |   |
|------------------|-----|-----|-----|--------|--------|---|
| Poonac           | ... | ... | ... | 38,084 | —      | — |
| Groundnut Cake   | ... | ... | ... | 8,945  | —      | — |
| Cotton Seed Cake | ... | ... | ... | 36,675 | 83,704 | — |

## From Maize Department :—

|             |     |     |     |         |         |   |
|-------------|-----|-----|-----|---------|---------|---|
| Maize Flour | ... | ... | ... | 105,211 | —       | — |
| Maize Bran  | ... | ... | ... | 35,875  | —       | — |
| Maize Rice  | ... | ... | ... | 53,855  | 194,941 | — |

## From Animal Feeding Stuff Department :—

|                                    |     |     |     |        |                 |                 |
|------------------------------------|-----|-----|-----|--------|-----------------|-----------------|
| Cow Feed (remixed)                 | ... | ... | ... | 850    | —               | —               |
| Special Maize Mixture (remixed)    | ... | ... | ... | 8,214½ | 9,064½          | —               |
| To Animal Feeding Stuff Department | ... | ... | ... | —      | —               | 674,688½        |
| Industrial Loss                    | ... | ... | ... | —      | —               | 4               |
|                                    |     |     |     |        | <u>674,692½</u> | <u>674,692½</u> |

## ANIMAL FEEDING STUFF DEPARTMENT :—

|                             |     |     |     |                |                 |                 |
|-----------------------------|-----|-----|-----|----------------|-----------------|-----------------|
| Stock on 1.7.55             | ... | ... | ... | 19,150         | —               | —               |
| From Mixing Department      | ... | ... | ... | 674,688½ (net) | —               | —               |
| Empty Gunnies               | ... | ... | ... | 12,590         | 706,428½        | —               |
| Sales                       | ... | ... | ... | 692,481        | —               | —               |
| Sent to Mixing (remixed)    | ... | ... | ... | 9,064½         | —               | —               |
| Balance of Stock on 30.6.55 | ... | ... | ... | 4,883          | —               | 706,428½        |
|                             |     |     |     |                | <u>706,428½</u> | <u>706,428½</u> |

Crushing of Poonac : five tons for Animal Husbandry Officer.

STATEMENT OF MAIZE PROCESSED DURING THE FINANCIAL YEAR ENDED  
30TH JUNE 1955

## RECEIVING DEPARTMENT :—

|                      | Kilos | Kilos          | Kilos          |
|----------------------|-------|----------------|----------------|
| Stock on 1.7.54      | ...   | —              | —              |
| Purchases            | ...   | 152,275        | —              |
| To Drying Department | ...   | 325            | —              |
| To Dry Maize Store   | ...   | —              | 152,275        |
|                      |       | <u>152,275</u> | <u>152,275</u> |

## DRYING DEPARTMENT :—

|                           |     |     |            |            |
|---------------------------|-----|-----|------------|------------|
| From Receiving Department | ... | 325 | 325        | —          |
| To Dry Maize Store        | ... | 315 | —          | —          |
| Loss through evaporation  | ... | 10  | —          | 325        |
|                           |     |     | <u>325</u> | <u>325</u> |

## DRY MAIZE STORE :—

|                           |     |     |         |         |         |
|---------------------------|-----|-----|---------|---------|---------|
| Stock on 1.7.54           | ... | ... | 28,985  | —       | —       |
| From Receiving Department | ... | ... | 151,950 | —       | —       |
| From Drying Department    | ... | ... | 315     | 181,250 | —       |
| To Milling Department     | ... | ... | 61,700  | —       | —       |
| Stack Loss                | ... | ... | 13,400  | —       | —       |
| Balance on 30.6.55        | ... | ... | 106,150 | —       | 181,250 |
|                           |     |     |         | 181,250 | 181,250 |

## MILLING DEPARTMENT :—

|                                |     |     |        |         |   |
|--------------------------------|-----|-----|--------|---------|---|
| From Dry Maize Store           | ... | ... | 61,700 | —       | — |
| From Ground Maize Store (rice) | ... | ... | 51,270 | 112,970 | — |

## TO GROUND MAIZE STORE :—

|                 |     |     |     |         |         |         |
|-----------------|-----|-----|-----|---------|---------|---------|
| Rice            | ... | ... | ... | 12,650  | —       | —       |
| Flour           | ... | ... | ... | 96,420  | —       | —       |
| Bran            | ... | ... | ... | 1,900   | —       | 110,970 |
| Industrial Loss | ... | ... | ... | —       | —       | 2,000   |
|                 |     |     |     | 112,970 | 112,970 |         |

## GROUND MAIZE STORE :—

|                                            |     |     | <i>Rice</i> | <i>Flour</i> | <i>Bran</i> |
|--------------------------------------------|-----|-----|-------------|--------------|-------------|
| Stock on 1.7.54                            | ... | ... | 102,550     | 84,182       | 34,250      |
| From Milling Department                    | ... | ... | 12,650      | 96,420       | 1,900       |
| To Mixing Department (Animal Feeding Stuff | ... | ... | 53,855      | 105,211      | 35,875      |
| Sales                                      | ... | ... | 3,340       | 60,225       | —           |
| To Milling Department                      | ... | ... | 51,270      | —            | —           |
| Stack Loss                                 | ... | ... | 100         | 2,014        | 275         |
| Balance of Stock on 30.6.55                | ... | ... | 6,635       | 13,152       | —           |
|                                            |     |     | 115,200     | 180,602      | 36,150      |

S. STAUB,  
*Sugar Technologist.*

### Legislation

The following ordinance, Proclamation and Government Notice were issued during the year :—

Ordinance No. 32 of 1955—The Tea Industry Control (Amendment) Ordinance, 1955.

Proclamation No. 14 of 1955—To prescribe the conditions under which rose plants may be imported from certain countries.

Government Notice No. 18 of 1955—The Animal Diseases (Amendment) Regulations, 1955.

### Publications

The following bulletins were published during the year :—

1. Bulletin No. 90—A revised food-plant catalogue of the Insects of Mauritius, by J. R. Mamet, Assistant Entomologist.
2. Bulletin No. 91—The Commoner Insect Pests of Orchards, Food Crops, Vegetables Flower Gardens and Household in Mauritius (3rd Edition), by L. A. Moutia, Associate Entomologist.

### **Conversion Table**

---

|                 |     |     |     |     |                        |
|-----------------|-----|-----|-----|-----|------------------------|
| 1 Arpent        | ... | ... | ... | ... | ... = 1'043 Acres      |
| 1 Gaulette      | ... | ... | ... | ... | ... = 10'6 feet        |
| 1 Metric Ton    | ... | ... | ... | ... | ... = 1,000 kilos      |
| 1 Long Ton      | ... | ... | ... | ... | ... = 1,016 kilos      |
| 1 Kilo          | ... | ... | ... | ... | ... = 1,000 grams      |
| 1 English pound | ... | ... | ... | ... | ... = 453'6 grams      |
| 1 Cwt.          | ... | ... | ... | ... | ... = 50'803 kilos     |
| 1 Cord          | ... | ... | ... | ... | ... = 92'82 cubic feet |
| 1 Gallon        | ... | ... | ... | ... | ... = 4'546 litres     |
| 1 Rupee         | ... | ... | ... | ... | ... = 1/6d sterling    |









